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## MEDICAL SCIENCE.

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PART I.  
ORIGINAL COMMUNICATIONS.

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ART. I.—*Some Remarks on Gonorrhea and Syphilis.* By MAURICE HENRY COLLIS, M.B., F.R.C.S.I., Surgeon to the Meath Hospital and County Dublin Infirmary; Member of Council R.C.S.I., and of Council of Surgical Society.

ALTHOUGH few persons will now pretend to add much to the symptomatology or treatment of gonorrhea and syphilis, yet all will allow that there is still room for the honest records of experience in both departments. As I have ventured to show, in the pages of this Journal, there is no domain of surgery in which dogmatic assertion is so prevalent a feature; and where dogmatism is found to exist, much imperfection of observation and uncertainty of action may fairly be suspected. Such must be my apology for writing on a subject so hackneyed, and of which most practitioners will think they have already had more than enough. I do not now presume to do more than state the results of a very moderate experience in the treatment of uncomplicated forms of gonorrhea and syphilis, founded not alone upon my own practice, but upon such observations as I have been able to make of the practice of others.

Dr. T. Chambers asserts that gonorrhea, if let alone, will get well spontaneously in two or three weeks. Certainly the milder forms get well on surprisingly little treatment. For years I have not given either cubebs or copaiva at all. They are, perhaps, useful drugs, but I have not found it necessary to use them; the disease, as I have met with it, admitting of a ready cure by less unpleasant remedies. In persons of full habit and great vigour I generally give a saline purgative at the commencement, followed up by minute doses of tartar emetic, if there be much constitutional disturbance or a tendency to high local inflammation. Cold affusion will also be of service in these cases. The main treatment, however, is by injections; not heroic solutions of nitrate of silver, which are eminently uncertain and dangerous in their action, but by weak, and frequently repeated, solutions of alum. The rule for applying injections is simple:—If the inflammation be severe, let the solution be weak and frequently used; if it be of chronic type, let the solution be strong and seldom used. This is the key to the successful use of injections; and not only is the rule applicable in gonorrhea of the urethra and of the conjunctiva, but it may be extended (with necessary modification) to treatment of all inflammations, and to the use of internal remedies as well as external applications. Indeed, I think, a similar rule may be traced in the effects of all stimulating applications, whether general or special, in the use of tonics, astringents, and sedatives; so much so as to convey to my mind the existence of a general law regulating the actions of a large class of remedial bodies. The terms of it would run something in this form:—"The more acute the disease, the more frequent and the weaker the remedy; the more chronic, the stronger and less frequently applied."

The astringent on which I chiefly rely for the cure of gonorrhea—is alum. In the most acute form of gonorrhea, when the discharge is profuse, thick, and glutinous—the lips of the urethra red, villous, and pouting—the patient should be directed to pour a small jug of cold water over the organ, and immediately inject a syringeful of solution of alum of the strength of half a grain to the ounce. This injection is to be repeated every half hour for the first day, and as often at night as the intervals of sleep will allow. In all probability, before 24 hours have elapsed, the secretion will be lessened in quantity, and somewhat thinner; the local heat, swelling, and redness will have abated; and the ardor urinæ will have almost disappeared, if the saline purgative and the tartar emetic have been

used along with the local treatment. The injection may then be increased to a grain to the ounce, and used every hour; in all probability, after the lapse of 48 hours more, the discharge will have ceased entirely; the injections, however, must be continued for another week or two—but at the strength of half a drachm to the eight ounces—three times a day; otherwise a relapse may occur, which will be harder to cure than the original clap.

Four objections are made to this plan of treatment:—The difficulty of carrying it out in its integrity; the irritation produced at the orifice of the urethra by the repeated use of the syringe; the liability to cystitis, by the gonorrheal fluid being carried into the bladder, and the inefficiency of such weak solutions.

To the last objection I can only oppose my experience, backed by the evidence of such surgeons and pupils as may have observed my plan of treatment at the Meath Hospital for the last eight or ten years. Besides, reliance is not exclusively placed on the injections; the lowering effects of the purgative and tartar emetic must be taken into account.

Cystitis is not likely to occur, because the proportion of alum is quite sufficient to destroy the infectious character of the pus by coagulating it, and to leave a residue for astringent action on the urethra besides. Injections of plain cold water might otherwise be used at the outset, in place of the alum, but for this risk of cystitis. It has, however, happened, that such injections have set up inflammation of the bladder, by sending on an unaltered pus into that organ, and, consequently, I have always added to the water a sufficiency of alum to prevent that accident.

Irritation of the orifice of the urethra, in consequence of the frequent use of the syringe, is to be avoided by having a very smooth syringe of glass; by only introducing it so far as is absolutely necessary, and not letting the point enter as high as the ridge corresponding to the corona glandis; and by douching with cold water before and after syringing.

Lastly, there is, no doubt, difficulty in having these directions fairly carried out, for obvious reasons; but the case I have supposed is an extreme one, in which some degree of confinement will be unavoidable, and, consequently, this difficulty will be more easily met.

In the commoner forms of gonorrhea, where local inflammation and general fever are not severe, and where the discharge and ardor urinæ are the only sources of discomfort, little internal

medicine need be given—a purgative pill or so if necessary, and a few drops of liquor kali in gum-water or camphor mixture, with a pill of hyoseyamus, camphor, and morphia at night, will be enough. Here, however, the judgment of the surgeon will be called into play in each case to apportion the strength and frequency of the injection. The general rule has been given above; in carrying it out, the amount of discharge—its condition, purulent or half mucous—the appearance of the orifice of the urethra—and the amount of ardor urinæ will guide us. If the discharge is still abundant, puriform, and accompanied by redness of the lips of the urethra, and by considerable scalding, we must use weak solutions (eight to twelve grains to the eight ounces of water), every second, third, or fourth hour; but if, on the other hand, as will occur in old staggers, the discharge is half mucous, the lips blue and the scalding not complained of much, we may advance in strength to a drachm, and diminish in frequency to three or four times a day. If a syringe-ful is injected we may spare our patient much of the unpleasant scalding by injecting before micturition.

This treatment will cure an ordinary gonorrhea in from four days to a week—at least, it will in that time stop all discharge; but, as in the acuter types, the injections must be continued for several days lest a relapse occur, as is sure to be the case after excitement or errors in diet, and sometimes without such provocation.

Gleet, the opprobrium of this branch of surgery, is not unfrequently kept up by over anxiety to cure it. The introduction of a bougie smeared with lard and dusted over with powdered alum, or a single touch of nitrate of silver by means of a *porte caustique*, not repeated more than twice, and at an interval of a week, will sometimes succeed, provided nothing else is done in the interval, and the organ get sufficient rest. I have occasionally cured a gleet by first administering muriated tincture of iron and tincture of opium, in doses of fifteen drops of the former to five of the latter, three times a day, and thus rendering the discharge more genuinely puriform. When this effect follows, a spontaneous cure will sometimes arise; and if not, the injections of alum will often now succeed, though they previously failed.

The objections made, with some justice, to the use of strong solutions of nitrate of silver, do not apply to alum. Stricture, inflammations of the prostate or bladder, are manifestly unlikely to arise from the plan of injection which I have found sufficient;

both the material and strength at which it is used are much milder than even a very moderate solution of lunar caustic; and even at full saturation, or when applied in substance, alum is a simple astringent, reducing the calibre of vessels and contracting redundant tissue to natural dimensions, not destroying it in any degree, as nitrate of silver does, nor producing a cicatrix with the contractile tendencies of a burn.

*Gonorrheal Ophthalmia*.—This affection—so formidable to the surgeon to deal with, and so fatal to the usefulness of the eye—yields with marvellous rapidity to repeated weak injections. The inflamed and cedematous conjunctiva being punctured, or snipped with the scissors if necessary, a careful student can be put beside the patient's bed, and shown how to send the contents of the syringe underneath the upper lid, from the external canthus across the eyeball. In the most acute cases a solution of a quarter of a grain of nitrate of silver to the ounce of distilled water should be used every ten minutes, for the first hour; after that a half-grain solution should be injected every half hour. If this is carefully carried out for the first twenty-four hours, the patient's eye will be quite safe. A stronger solution may then be used; and, if needful, it may be followed, in a couple of days, by Guthrie's ointment of nitrate of silver, if the villous condition of the conjunctiva should seem to require it. I have followed this plan of treatment generally, for at least nine years; and in that time I have never lost an eye from gonorrheal ophthalmia, with one exception: in that case the pupil in charge broke the syringe, and, thinking it a matter of no importance, he waited for twenty-four hours to get it replaced; by this time the cornea had sloughed in one point, and the iris protruded. The man, however, was so fortunate as to recover, with comparatively slight injury to sight. Such surgeons and pupils as followed any of these cases have been struck with astonishment at the facility with which this formidable affection is cured. I cannot at this moment remember to whom the credit of weak injections of nitrate of silver is due; my attention was drawn to it by seeing the failure of the heroic treatment, which sacrifices nearly 50 per cent. of eyes in whole or in part. I found, however, that the weak solutions were insufficient for the cure of the disease unless frequently applied.

*Syphilis*.—The observations of most surgeons will confirm Ricord's doctrines on the variations of syphilis, as modified in his later years, and rendered familiar to us in the writings of Lee and others. I use the term variations as a better one than varieties, because it

does not dogmatically assert a variety of poisons. This necessity for a variety of poisons, instead of a variation in the poisoned, seems to me the weak point of the Ricordian theory. Indeed, Ricord himself recognizes the individual as the modifying agent of the infection; and we may fairly give our consent to the view that both the source of the poison (an individual) and the place of deposit of the poison (an individual) impart peculiarities or individualities to the poison in each case. Accepting this view, and bearing it in mind, it matters less whether, for convenience of memory, we use Ricord's, or Lee's, or any other man's grouping of individualities into classes. Carmichael's groups were too fanciful, ran too much to an extreme fineness for truth; so also are, and must be, all systems. They are generally true, critically false, and much of the virulence of opposing systematizers is due to forgetfulness of this fact. Such being my creed, and reared, as I was, in the practice of a school which considered mercury as a *sine quâ non* in all cases of syphilis, I may, perhaps, incline too much to the opposite conclusion, that syphilis and mercury not only have been, but still are, too much regarded as opposing forces—that mercury is not a specific for syphilis in any proper sense of the term, and that, in the large proportion of cases of syphilis, no mercury need be given whatever; while in the remainder it is to be given on the same principles and in similar doses as form our practice in other diseases. I do not believe mercury to be required at all in soft chancre, as a rule, unless the use of black wash, to heal the local sore, deserve the name. Soft chancre is so seldom accompanied by any constitutional disturbance that it requires little internal medicine; a blue pill may be needed once in a way, as in any complaint, to regulate the liver. When secondaries follow soft sores, they are so mild as to get well with very slight measures; and I am quite sure I have seen mercury, even in what is called moderate doses, do harm in such cases. Tepid salt-water baths, and small doses of the iodides of potash, and, if necessary, of iron, a little bark, some chlorate of potash, cod-liver oil; or, if a case be at all obstinate, a mixture of iodine, iodide of potash, and arsenic, after the formula given by Neligan,<sup>a</sup> have

<sup>a</sup> R Iod. potassii	gr. xvi.
Idinii puri	gr. iv.
Liq. arsenicalis	sc. iv.
Syrupi aurantii flor.	oz. ii.—Misce.

Every drachm contains five minims of arsenical solution, one grain of the iodide, and a quarter of a grain of iodine. I have found this combination most successful in obstinate psoriasis and pityriasis.

M. H. C.

succeeded in the few cases of secondary roseola or pityriasis which I have met with after soft chancre. Cleanliness and simple lotions will cure the local sores. Mischief invariably arises in these cases from allowing the purulent discharge to accumulate, become acrid by decomposition, and produce excoriation; frequent washing with water, and slightly astringent lotions, will effect a rapid cure.

Of the local complications which arise with soft chancres there is no need to write. Phymosis, bubo, warts, &c., are subjects on the treatment of which no very material difference of opinion exists; buboes, indeed, may be opened by a puncture, if they be seen when the skin is still sound; but when it is undermined, a free incision will probably be needed; but of this every surgeon will readily judge in each case for himself.

It is essential, for the proper and scientific treatment of any disease by a given medicine, that he who uses it should thoroughly understand its mode or modes of action. Does mercury act on constitutional syphilis chemically, destroying a poison which circulates in the blood, or which is deposited through the tissues? In other words, is it an antidote? or does it cause the elimination of such a poison through its stimulating effects upon eliminating organs? Or again, does it so improve the organs of nutrition that they supply a healthy pabulum which shall displace what is diseased when this latter is worn out? Or, lastly, does it cause the death of tissues enfeebled from the moment of their organization by the debilitating effects of an animal poison? And, as regards itself, is it eliminated along with the dead tissues, or does it remain in the system to influence subsequent nutrition for good or evil? Some pathologists may hold to one view, some to another. For myself I must confess I do not believe mercury to be a specific or an antidote, in any sense, to syphilis. I do not believe it improves the assimilating powers; I do not believe it has the power of eliminating the poison through natural organs; but I do believe that it acts as a poison on feeble and ill-organized material; and that if not itself expelled from the system, it will exercise an influence for evil upon subsequent nutrition, proportioned to the amount that has been introduced into the system, and the feebleness of the individual. Doubtless we must be satisfied to argue a good deal from analogy as to its mode of action; but circumstances enable us to do so with almost absolute accuracy. We are fully acquainted with its anti-phlogistic powers, and we can almost see its mode of action in one form of venereal disease, so that it is not so presump-

tuous to conclude upon its general mode of action as might at first sight be supposed. In venereal iritis, by administering it in such a way as to cause its rapid absorption, we check the organization, as the phrase goes—that is to say, we cause the death of certain lymph which is effused from the inflamed and congested vessels of the iris, and so we save the pupil from being blocked up, the iris from contracting adhesions to the capsule of the lens, and from becoming permanently thickened and sluggish in its action. Here we have the power of seeing, in one case, what happens if the disease be allowed to run on unchecked, and in the other we can see with equal ease the effects of the mercury at all stages of its exhibition. Following, by analogy, its apparently similar action in peritonitis and other acute inflammations, we are justified in supposing that in these also it kills the lymph; we have other means of knowing that such lymph is degenerate, and capable only of imperfect organization. Again, we find that mercury, when administered in a suitable manner, will cause the absorption of certain deposits of lymph already more or less organized, as in the hardnesses of many chronic inflammations. Are we not justified in concluding that it causes their removal simply by depriving them of life, and leaving them free for the ordinary processes of removal? Finally, we find it exercise an active influence in the removal of the plastic effusion which forms the essential feature of the hardened chancre and knotted bubo; and are we not justified by all analogy in concluding that the principle of its action is identical, in this case also, with what it is clearly proved to be in the other—that it kills the morbid lymph where deposited in the tissues? Can we go a step further and say if it exercises any similar power over lymph which still circulates in the fluid state? Here direct facts fail us; but if we look at the pale cheek of one who has been salivated, if we feel his wasted and flabby muscles, and note the slow beat of his weakened heart, we have good reason to conclude that the mercury has killed more than the deposited lymph, and more than such lymph of feeble vitality as it found circulating in his vessels. Is it not, then, true, that in handling mercury we handle a two-edged sword, and that to wield it wantonly is to kill, and not to cure. This much may certainly be affirmed—that every grain of mercury which is exhibited will kill its proportion of living tissue; and if there be no tissue enfeebled by disease, the energy of the poison must be spent on the destruction of the sound. Let no man say that a few grains of mercury too much are neither here nor there. The worst case of

salivation I ever saw, short of death, was produced by six grains of grey powder, given in doses of two grains, on alternate nights, to a full-grown man. It was profuse and lasting, and brought the patient to death's door. No doubt he was a wretched strumous creature; and the surgeon was not to blame for the idiosyncrasy which produced such unpleasant and dangerous results. The medicine was given as an alterative for strumous ophthalmia; but the case shows that a small dose of the mineral acts as a poison, and that the amount of mischief will depend upon the individual. To come, however, to the application of principles, I may fairly be asked, how is a hard chancre to be treated? and to this I reply, many have treated them not without mercury altogether, but with mercury where needed, and in conjunction always with remedies which will tend to obviate the almost unavoidable injury which mercury, however carefully given, will do to the healthy tissues of the body. Such men tell us—and we have no right to question their truthfulness—that other medicines will produce the elimination of syphilized structure. Thus, Weedon Cooke gives instances in which hard chancre have been cured without a grain of mercury, the hardness disappearing, and no secondaries following.

For my own part, I must say that genuine hard chancres, as described by Lee, are comparatively rare; but in many cases a hardened base exists, which is very easy of resolution after the sore has been healed by black wash; for this purpose frictions with a weak ioduret of mercury ointment will suffice, or with mercurial ointment itself. Such forms of chancre are found most often in those of sallow complexion and greasy skin; and for them a few grains of blue pill (two or three grains) twice in the week, will be serviceable. The genuine hard chancre, with a base that is likened, by Ricord, to a piece of parchment under the skin, is very rare, and requires more mercury, or rather it requires a full dose (five grains of blue or Plummer's pill) twice a week, for two, three, or four weeks. In both cases the mercury may be continued until it begins to resolve the hardness, provided we see no signs of its acting as a poison. Should it produce pains in the bowels and diarrhea, a quickened pulse, and loaded tongue, with symptoms of malaise, not to say febrile exacerbations, it must be laid aside—at least it ought to be. In any case, as a rule, I suspend the mercury the moment an impression has been made upon the hardness, and I allow the medicine which has already been taken to expend its energies completely before giving another dose. As long as the process of

resolution goes on, further doses are not needed; but when it ceases they can be resumed. In this way I am careful not to give a grain of the medicine needlessly, and the patient's strength is husbanded. Rapid administration of mercury, in the ordinary method of three doses per diem, or even one dose every night, induces a febrile condition, with disturbance of the digestive powers; and it is well that such a result occurs, for by this means intestinal irritation is set up, and a large portion of the poison is got rid of in the excretions of the bowels, otherwise we should often witness the evil effects of the drug in breaking down the strength of patients. The medicines to which I chiefly trust as co-agents with mercury, in obtaining the removal of syphilitized tissue, are, 1st, those which gently stimulate the skin, liver, and kidney; 2nd, the whole range of tonics, vegetable and mineral, with cod-liver oil, and generous diet, in debilitated or strumous habits. The iodides of potash and soda will often suffice to complete the work of absorption commenced by mercury; they are milder, though very similar, in their action, but are by no means so harmless as to be suitable for indiscriminate use. In those who have been previously over-dosed with mercury they are useful, from their attraction to the periosteal tissues, in which mercury seems to have a special aptitude for depositing itself; but, as the object of this paper is rather confined to the consideration of the more common and uncomplicated forms of venereal diseases, and to express my conviction that their cure is neither mysterious nor difficult, I shall not enter upon any of the more abstruse points connected with either syphilis or gonorrhea. It will be enough to add, that in many cases where mercury has been abused, the organs of elimination are so deadened as to answer only to further doses of the mineral—all milder stimuli being ineffectual in stimulating their exhausted energies. In aggravated secondaries arsenic exerts a powerful influence, in combination with iodine and mercury.

In one form only of the disease—viz., the congenital—there seems to be no medicine but mercury capable of effecting a cure; this is plainly owing to the almost universal degradation of the tissues of the body. In such cases, as long as the medicine is required it is borne in larger doses, proportionately, than in any form of the disease in the adult. Where the appetite of the little patient has remained good, and its powers of assimilation unimpaired, a rapid formation of healthy structure fills up the place of the morbid, which is removed by the aid of mercury; but where the appetite fails, and cannot be restored by mild stimulants, the case is hopeless, the little

one had better be let die in peace, than have its agonies increased by the superaddition of what will then become an irritant poison. In the hopeful cases of congenital syphilis, mercurial inunction by Brodie's stocking seems the mildest and most effectual mode of treatment. In suitable cases I have never seen it fail, either alone or with small doses of grey powder every night. Assimilation and elimination are rapid processes with the child; and to this is due the comparative facility of administering mercury beneficially in congenital syphilis.

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ART. II.—*A Statistical Inquiry into the Prevalence of Numerous Conditions affecting the Constitution, in 1,000 Phthisical Persons, when in health.* By EDWARD SMITH, M.D., LL.B., F.R.S., Assist.-Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, &c.

THE following inquiry has occupied a large part of seven years, and is intended to show, at one view, the prevalence of a large number of conditions which are believed to modify the constitution, or which are evidences of modified constitutions in consumptive families. It is, therefore, primarily, an investigation limited to a particular class of persons—a class the largest which could be selected upon the basis of disease; but I have thought that whilst such information could not but be of value to life assurance offices and others in reference to this class, it would form a point of comparison with which similar inquiries in other classes, and indeed of the general community, might be compared, if any inquirer should think proper to extend it. The extent is much greater than any heretofore recorded, and, so far as I am aware, its aim has not been previously anticipated.

The conditions under which the inquiry has been made may be thus briefly stated:—

The cases were exclusively such as presented well marked signs of consumption. The diagnosis was, in every instance, made either by myself or by my colleagues at the Hospital for Consumption; and, as the cases had been under observation for a period, I venture to hope that no reasonable exception can be taken to it.

The inquiry was most carefully restricted to the period of health, except in reference to spitting of blood, the first occurrence of which, at whatever period, was recorded.

The patients were questioned alone, or in small parties of two or more at a time. The nature of the inquiry, and the limitation to the period of health, were carefully explained, and no person was included who was deficient in ready intelligence. As some of the questions required thought before the answer could be given, there was an advantage in asking them in parties, since time was given for consideration, and the example of each quickened the apprehension of the others. When any carelessness was evinced, the patient was removed; and when a similarity in the answers of two or more occurred, care was taken to repeat the inquiry and prevent routine answers. In every case each patient gave a separate answer.

The question of ages often presented a difficulty; many persons, and particularly the Irish patients, did not know their own age, and, it might be inferred, did not know the ages of their parents—and such were excluded. The periods of the occurrence of the diseases of infancy were determined approximately, or actually, as the case might be, so that they could be arranged under short periods—as under age 2, 2 to 5, 5 to 7 years, &c. The only difficulty arose in the cases in which the disease had occurred before their present recollection; but careful attention sufficed to arrange the ages under the above headings. When the patient was not sure that the disease had occurred, the answer was separately recorded, so that in the general returns the headings were—"Had the disease," "Had not the disease," "Does not know." The ages of the parents at the time of their death, and at the birth of the patient, were commonly known. The latter was ascertained by deducting the patients' from the parents' age at the time of this inquiry; and if the parent were dead, and the time of death known, the age at death and the subsequent period were added, and the same process was adopted. These calculations were always made by myself. In a few instances it was impossible to learn the age of the parent at either of the two periods, and such were classed as "Not known."

Questions which were of a private nature, as immorality in reference to intemperance, sexual abuse, masturbation, syphilis, and gonorrhea, were asked privately and carefully of each person alone, and they were, of course, restricted to male patients. Each case was identified by the initials of the name, the name of the physician, and the number in the hospital books.

In reference to the trustworthiness and value of the answers, I remark:—

1. That I believe them to have been given in good faith, and with care. In a very few instances, in females, there appeared to be a little confusion in the patient's mind upon some minute questions—as, for example, the age when the menses first appeared—but that was soon discovered in the course of so minute an inquiry.

2. The part of the inquiry the most liable to error is that of the diseases to which the parents, and brothers, and sisters, had been subjected; but it must be borne in mind that the questions asked were of diseases which would fix themselves upon the mind—as insanity, cancer, diseased bones and joints, scrofulous sores and scars, &c. The occurrence of consumption was limited to the relatives who had died from it; and by inquiry as to the age at death, and many other circumstances, erroneous opinions were corrected.

The state of the general health of the parents, both before and after the birth of the patient, was sought in only a general manner, such that any person would be able to supply. That of the health before the patient's birth must, of course, have been derived from hearsay; but in the degree in which it was recorded there can be no doubt but the patient must have been sufficiently informed.

3. There must be liability to error in all inquiries in which we depend for our information upon others, but the errors are, for the most part, those of omission. In such inquiries as the present the information, whether obtained for the case-book or the assurance office, must be derived from the patients alone; and hence I venture to claim for this inquiry as near an approach to truth as the case admits of. None of the patients included in this list belonged to the lowest class of the community, but nearly all were of the respectable working middle classes. No pains were spared in arranging the scheme of inquiry, the selection of the cases, the mode in which the questions were asked, and the sifting of the answers; and it may be fairly hoped that so long an inquiry, conducted upon a uniform plan throughout, would supply that tact and experience which would tend to accuracy. The whole record and the whole analysis have been made by myself.

4. Such questions as those of age, sex, residence, and occupation, can have value only as indicating the character of the persons who were submitted to inquiry. They are not adapted to show the prevalence of phthisis in the community under these various conditions. It is also a circumstance to be desired that similar details should exist in reference to the whole community including this



PREVIOUS HEALTH AND DISEASES.	TEMPERAMENT AND TIBRE IN HEALTH	Colour	49	PREVIOUS HEALTH AND DISEASES. con.	Spat blood first, æt.	97	
		„ Iris	50		Bleeding nose, Piles, &c.	98	
„ Complexion		51	Scrof. glands, sores, joints		99		
Frame		52	Phthisis, æt.		100		
„ rounded		53	Syphilis, Gonorrh., æt.		101		
„ spare		54	Insanity, Fits—what		102		
„ height		55	Rheu. Gout, Canc. Diab.		103		
„ weight (in health)		56	Ague, or other Fever		104		
Susceptible and variable		57	Infl. of lungs, Asthma		105		
Firm. Languid		58	Other diseases		106		
Cold hands or feet		59	Appetite, B. M. G.		107		
Temperam. S. N. Ly. Bil.		60	General health „ „ „		108		
PARENTS, F. M. ALSO B. S.	Nourished	61	OVER ÆT. 21 (STATE THE AGE)		Spat blood first, æt.	109	
	Unsteady habits—F. M.	62			Drains of blood	110	
	General health—F. M.	63			Scrof. glands, sores, joints	111	
	Æt. at death—F. M.	64			Phthisis, æt.	112	
	Æt. at patient's birth—F. M.	65			Syphilis, Gonorrh.	113	
	Health before do.—F. M.	66			Insanity, Fits—what	114	
	No. of child. now liv. & dd.	67			Rheu. Gout. Canc. Diab.	115	
	Scrof. Sores, Scars. Glands	68			Liver, kidney, or brain	116	
	„ Eyes, joints, &c.	69			Ague, or other Fevers	117	
	Consumption, Asthma	70			Freq. Dysent. or Diarrh.	118	
	Insanity	71			Great perspiration	119	
	Rheu. Gout, Canc. Diab.	72			Much mercury, Bled	120	
Liver, kidney or brain	73	Appetite, B. M. G.	121				
Ague, or other fevers	74	General health „ „ „	122				
Other diseases	75	FOOD (CHIEFLY EAT)	Menses, 1st, æt.		123		
UNDER ÆT. 3	Development at birth		76		„ little, much	124	
	Marasm. Sores		77		„ frequent, seldom	125	
	Bones, joints		78		Leucorrhœa much	126	
	Rickets, deform. of chest		79		Great loss in labour	127	
	Inflam. of lungs		80		Long nursing	128	
	Fits—what		81		Liked, under æt. 14	129	
	Appetite, B. M. G.		82		Disliked, „ „	130	
	General health „ „ „		83		Liked, „ 21	131	
	UNDER ÆT. 14		Measles and Sequelæ, æt.		84	Disliked, „ „	132
			Scarlatina and „ „		85	Liked, over æt. 21	133
			Smallpox „ „		86	Disliked, „ „	134
		Hooping cough „ „	87		Parents related	135	
Scrof. eyes, joints, bones		88	Order of birth in family,				
„ Cerv. Ax. Ing. glands		89	as 1st, 2nd, &c.		136		
Phthisis, æt.		90	Cause of attack		137		
Spat blood first, æt.		91	When it began		138		
Inflam. of lung		92					
Other disease of ditto		93					
Delicacy of lung		94					
Appetite, B. M. G.		95					
General health „ „ „	96						

The returns are divisible into two large classes, viz., those which refer to the parents, and those which belong to the patients; and I propose to consider them in their order, after stating the indicating questions of the age, place of birth, and place of residence of the patients.

## GENERAL QUESTIONS.

### II.

#### 1. *The Age of the Patient at the period of the Inquiry.*

This was recorded to the precise year; but for this analysis I have collated them into periods of under 20 years, and of each subsequent five years.

Age, . . .	to 20	20 to	25	30	35	40	45	50	55	60
Females, per cent.,	15·8	20·8	25·5	15·8	10·	8·	2·	1·	·26	·52
Males, „	11·5	24·8	19·1	18·5	10·	6·6	5·1	2·5	1·1	·16
Average, „	13·	22·9	21·3	17·3	10·	7·1	3·9	1·9	·8	·3

The greater proportion were from 20 to 25, and from 25 to 30 years of age, in nearly equal proportions, and they comprehended 44 per cent. of the whole. About  $\frac{1}{8}$  were under 20 years, and 3 per cent. were more than 50 years of age. 57 per cent. were under 30 years of age. The number of females under 20 years, and from 25 to 30 years, was greater than that of males. The average age of the whole was 29·66 years males, and 27·5 years females.

### III.

#### 2. *Place of Birth.*

Per cent.	London and denser Suburbs	Country	Ireland	Scotland	Channel Islands and Foreign
Females, per cent.,	26·5	66·	4·	·75	2·5
Males, „ .	25·5	64·5	6·8	1·66	1·5
Both, „ .	25·9	65·1	5·7	1·3	1·9

30 per cent. were born in London and its denser suburbs, and 65 per cent. in other parts of England, so that but few were born in the other parts of the kingdom and in foreign countries. There was great equality in the sexes.

IV.

3. Place of Residence,

	Greater part of Life						The last Three Years				
	London	Country	Ireland	Scotland	Foreign	Various	London	Country	Scotland	Foreign	Various
Females, . . . . .	36.2	52.5	2.75	.25	1.	7.	55.7	39.5	.25	.25	4.2
Males, . . . . .	36.6	50.	3.83	.66	2.	6.8	52.1	40.6	—	1.8	5.3
Both, . . . . .	36.6	50.9	3.4	.5	1.6	6.9	53.6	40.2	—	1.2	4.9

36 per cent. had lived in London during the greater part of their lives, 51 per cent. in the country, and 7 per cent. in various places; but, during the last three years, 53 per cent. had lived in London, and 40 per cent. in the country.

Hence it appears that the conditions under which the patients had lived were very diverse, so that no class peculiarities could attach to them, except that of their condition in life. The majority had been born and brought up in the country, but one-half had recently lived in London.

In reference to the condition in life it may be added that, with the exception of 8.8 per cent., all could both read and write, and in only 14.3 per cent. had they been badly nourished at any period of their lives. In both of these respects the females were a little less fortunate than the males.

V.

*Education,*

*Nourishment.*

Could not both Read and Write		Not well Nourished at same period	
Females, per cent.,	9.7		13.5
Males, „	8.1		14.8

Hence it is probable that no number of persons could have been taken who would more fairly represent the active population of this island in reference to the conditions upon which health depends.

We will now proceed to cite the results of the inquiry; and in doing so shall divide them into two classes, viz., those affecting the parents and those affecting the individual.

## QUESTIONS RELATING TO THE PARENTS.

## VI.

*Mortality per cent.*

	Dead			Living
	Fathers only	Mothers only	Both	Both
Females, . .	53·2	47·5	28·5	25·7
Males, . .	55·1	45·5	27·8	25·3
Average, . .	54·4	45·9	28·1	25·5

We have already stated that the average age of the patients was 28·8 years, and it was seen that 54 per cent. had lost the father, 46 per cent. the mother, and 28 per cent. had lost both parents. In 25 per cent. both parents were living. There was singular uniformity in the two sexes.

## VII.

*Age of the Parents at their Death.*

In the original returns we have noted the precise age at death, but for the purpose of this analysis we have thought it would suffice to collate them into quinquennial periods. The per centage is obviously not calculated upon the whole number of patients, but upon only the number of patients who had died.

Age of Patient,	20 to		25		30		35		40		45		50		55		60		65		70		75		80		85	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Sex of Patient,	M.	F.																										
Mothers, .	2.3	.58	5.5	6.8	3.5	8.1	11.5	13.5	12.6	17.	15.1	9.8	16.6	13.3	5.5	7.5	12.	5.1	5.2	6.3	5.5	6.8	2.	1.1	2.	2.9	8.8	7.5
Fathers, .	-	1.	1.6	5.5	6.	4.5	7.	8.1	13.1	13.7	15.3	12.2	14.4	9.1	6.7	10.7	13.1	11.2	6.4	8.6	8.	2.5	3.2	1.	3.2	5.6	7.6	9.1
Average, .	1.1	.79	3.4	6.2	5.	6.2	9.1	10.8	13.1	15.3	15.4	11.	15.6	11.	6.3	11.8	12.7	8.3	5.9	7.8	6.7	4.5	2.6	1.	2.6	4.3	8.2	8.3
<i>Average of the Two Sexes of the Patients Combined.</i>																												
Mothers, .	1.44		6.1		5.8		12.5		14.8		12.4		1.5		6.5		8.5		5.7		6.1		1.5		2.4		8.1	
Fathers, .	.5		3.5		5.2		7.5		13.4		13.7		11.7		8.7		12.1		7.5		5.2		2.1		3.8		8.3	
Average, .	.9		4.8		5.5		10.		14.1		13.1		13.3		7.1		10.3		6.1		5.6		1.8		3.4		8.2	

8 per cent. were unable to answer the questions as to the age at death; of the remainder the largest quinquennial proportion died in the period from 40 to 45 years, but the true prevalent period was from 35 to 55 years, which alone included half of the whole deaths. 11 per cent. died under 35 years, and 27·0 per cent. lived to upwards of 60 years of age. Of the sexes of the parents there was the greatest mortality amongst the mothers up to æt. 55, but particularly in the period under æt. 30; and, in reference to the sexes of the patients, the mortality amongst the parents of the females was greater under æt. 30, and less than that of the males under æt. 55.

The average duration of life of the parents who had died was—mothers 48·2 years, fathers 52·9 years, both 50·8 years.

## VIII.

	Females		Males	
	No.	Average Years	No.	Average Years
Mothers, . .	167	48·5	255	49·9
Fathers, . .	193	51·6	305	53·7
Both, . .	360	50·1	560	51·9

*Health of the Parents.*

This inquiry embraced two periods—that which preceded the birth of the patient, and that embracing the whole life; and it comprehended the whole of the 1,000 cases.

## IX.

*Feeble Health before Patients' Birth.*

	Fathers	Mothers	Both included in the foregoing
Females, per cent., .	9·1	14·8	2·
Males,           " .	5·9	9·	1·9
Average,       " .	7·2	11·4	1·9

3·2 per cent. of the cases could not answer the questions.

X.

*Feeble General Health.*

	Fathers	Mothers	Both included in the foregoing
Females, per cent., .	15·7	25·	5·2
Males,           ,,   .	11·1	19·	3·6
Average,       ,,   .	13·	21·4	4·3

In the period preceding the patients' birth, 18 per cent. of one of the parents had had feeble health; and of that number the greater proportion, viz., 11 per cent., were the mothers. Both parents were similarly affected in 2 per cent. When the whole course of life was included the proportion increased, so that it became 34 per cent., and still the mothers exhibited a preponderance of 8 per cent. over the fathers. Both parents were feeble in 4·3 per cent.

*Unsteady Habits of the Parents.*

The inquiry was directed to ascertain the habits of both father and mother, but no special kind of conduct was particularized. In 23·0 per cent. one or both of the parents had been generally unsteady, but the proportion of the mothers was quite insignificant. There was a large preponderance of this evil in the parents of the male patients; the latter exceeding that of the females by 9 per cent.

XI.

	Father	Mother
Females, per cent., .	17·2	·5
Males,           ,,   .	26·3	1·
Both,           ,,   .	22·7	·8

*Diseases of the Parents of the Patients.*

*Consumption.*

I shall first cite the combinations of relationships which were given by the patients, and then make a summary of the prevalence

of mortality from this disease, under the different headings. I do not quote in the summary the number of each class of relatives who had died, but it was nevertheless ascertained, and also the fact as to whether the aunts, uncles, and cousins were on the fathers or the mother's side. I may, however, state that one female patient could count 10 relatives whom she had lost.

## XII.

*Relatives who have died of Consumption.*

G.F.	G.M.	F.	M.	B.	S.	U.	A.	Nos. and Sex of Patient		Per Cent.	G.F.	G.M.	F.	M.	B.	S.	U.	A.	Nos. and Sex of Patient		Per Cent.
								F.	M.	Aver. of both Sex.									F.	M.	Aver. of both Sex.
-								2	1	.66			-		-					1	.22
	-							4	1	1.1			-		-					1	.22
-	-							1	1	.44			-		-					1	.22
-	-							1		.22			-		-				4		.88
-	-							1	1	.22			-		-				1	1	.22
-			-					1	1	.44			-		-				3	1	.44
-			-					1		.22			-		-				1	2	.66
-			-					1		.22			-	-					1	1	.22
-			-					2		.44					-				1	1	.44
-									1	.22					-				1	1	.22
-								2	1	.66					-				1		.22
-								1		.22					-				2		.44
	-								1	.22					-				1		.22
									1	.22					-				1		.22
									1	.22					-				4	5	1.9
									1	.22					-				1	9	2.2
								20	19	8.5					-				1		.22
								26	30	12.3					-				1		.22
								9	3	2.6					-					1	.22
								22	34	12.3					-				1		.22
								27	35	13.6					-				1		.22
								16	12	6.1					-				1		.22
								3	2	1.1					-				1		.22
									4	.88					-					2	.44
								1	1	.44					-				1		.22
								1		.22					-				1		.22
								3	1	.88					-				5	8	2.8
								2	2	.88					-				8	8	3.5
								4	1	1.1					-				9	2	2.4
								1		.22					-				1		.22
								1		.22					-				13	4	3.7

This table is to be read continuously down the left and then down the right side. The - to the left hand of the Nos. indicates the relative or relatives who had died of consumption, whilst the

numbers opposite to it show the number of such relatives of the female and male patients respectively, and the average of them in the two sexes of patients combined. Hence, when there are several — they indicate that several relatives, of different degrees of relationship, have died in consumption; and the number of the combinations of such relationships is indicated by the numbers opposite to them. Thus, in the first line, the — is placed under G. F., or grandfather, and the numbers to the right show that in two cases of female patients, and in one case of male patients, the grandfather was the only relative who was known by the patient to have died from consumption; while in fifth line the — show that the grandfather, grandmother, uncle, and aunt of a male patient were the relations who had died of that disease.

### XIII.

#### *Summary of the Relationships.*

Sex of Patient	Grandparent Per cent.		Parents Per cent.		Br. or Sis. Per cent.		Parents, Br. or Sis. Per cent.		Uncles or Aunts Per cent.	
	Alone	All	Alone	All	Alone	All	Alone	All	Alone	All
Females,	1·7	4·5	13·7	26·5	15·7	25·7	·25	47·	5·5	13·7
Males,	0·5	1·6	8·6	17·3	13·5	21·6	·16	28·5	3·	6·
Average,	1·	2·8	10·7	21·1	14·4	23·3	·2	35·9	4·	9·1

The proportion in which consumption appeared in one relative only was very small, except in reference to the principal relatives—the parents and the brothers and sisters. In the parents it was 11 per cent., and in the brothers and sisters 14·4 per cent., and in each of these instances the relatives of the females had the larger proportion. The total proportion in which any set of relatives had died from the disease was, of course, much greater, so that one or both parents had died in 21 per cent., brothers or sisters in 23·3 per cent.; parents, brothers, or sisters in 36 per cent.; grandparents in 2·8 per cent. In every instance the mortality amongst the relatives of females was greater than in those of males; and in reference to the immediate relatives—parents and brothers and sisters combined—the excess was 19 per cent.

## XIV.

*Other Diseases.*

Various				Presumed Scrofulous			
	M.	F.	Both		M.	F.	Both
Rheumatism, per cent.,	25·2	20·	22·1	Eyes & Ears,	1·25	1·3	—
Gout and Rheumatic } Gout, per cent., }	7·5	7·	7·2	Joints, .	·25	·3	—
Cancer, „ .	3·5	3·	3·2	Bones, .	1·	1·1	—
Diabetes, „ .	·25	·5	4·	Spine, .	·25	—	—
Insanity, „ .	3·7	4·6	4·3	Glands, .	4·	5·	—
Liver, „ .	10·7	7·8	9·	General, .	3·	—	—
Kidneys, „ .	·7	1·8	1·4				
Brain, „ .	1·	2·1	1·7				
Ague, „ .	4·7	4·5	4·6				
Other Fevers, chiefly } Typhus, per cent., }	4·7	4·8	4·8				
Asthma, „ .	13·	13·6	13·4				

As it respects the prevalence of presumed scrofulous disease, we might almost pass it over without comment; for, with the exception of the continuance of enlarged glands in 5 per cent. of the cases, the proportion was utterly insignificant. In only 8 per cent. were there any evidences known of the existence of that class of diseases.

Rheumatism and asthma were the most prevalent diseases—the former having occurred in 22·6, and the latter in 13·3 per cent.; and of the latter 9·4 per cent. were found in one or both of the parents only. Liver diseases and gout follow next in the order of frequency, and ague and typhus fever had each occurred in nearly 5 per cent. of the cases. Insanity has been noticed in 4·3, and cancer in 3·2 per cent.; whilst brain and kidney affections and diabetes had been still less frequent. The variations in the returns of the two sexes of patients were unimportant.

XV.

*Consanguinity of the Parents.*

In only 6 instances, or .6 per cent., had the parents been related before their marriage; and of these an equal number belonged to each sex of the patients.

XVI.

*Age of Parents at the Patients' Birth.*

Age, Sex of Patient.	15 to		20		25		30		35		40		45		50		55		60		65	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Average,	3.9	4.4	23.6	21.2	21.8	24.8	22.8	24.6	16.5	13.2	9.1	9.1	1.2	1.3	.9	1.	.36	-	-	-	-	-
	1.4	1.6	17.	14.	22.	24.9	23.5	24.6	16.8	15.4	11.	9.8	3.9	4.4	2.5	3.6	.9	1.1	.36	-	-	.28
	2.7	3.5	20.4	17.3	22.1	25.	23.3	24.6	16.8	14.4	10.1	9.5	2.6	2.9	1.7	2.3	.6	.56	.18	-	-	.14
<i>Average of Both Sexes of Patients.</i>																						
Mothers,	4.1		22.4		23.2		23.7		14.8		9.1		1.2		.9		.18		-		-	
Fathers,	1.5		15.5		23.4		24.		16.1		10.4		4.1		3.		1.		.18		.14	
Average,	2.8		19.		23.3		23.9		15.5		9.8		2.7		2.		.59		.09		.07	

37 persons did not know the age of one parent, and 33 of both parents, and in 24 cases the record was omitted.

The most frequent age was from 25 to 35 years, and that period alone embraced 47 per cent. of the whole number. Only 2·8 per cent. were under 20 years, and in 19 instances, or about 2 per cent., the age was from 55 to 70 years. *Æt.* 20 to 40 comprehended 81 per cent. of the whole. There was singular uniformity in the returns of the two sexes of the patients; but in reference to the parents, there were nearly thrice as many mothers as fathers under *æt.* 20; and between *æt.* 20 and 25 there was an excess of one-half on the mothers' side. After *æt.* 35, the proportion of the fathers preponderated.

XVII.

Number of Children in each Family.

No. . .	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	21	23
Females, per cent.,	2.7	4.	5.7	7.	8.	11.2	9.2	10.7	7.7	8.	5.5	5.7	4.2	.2	.1	.5	.5	1.	.25	.25
Males, "	3.3	4.3	6.6	6.1	7.5	9.5	10.8	10.1	9.3	9.3	6.6	5.6	3.5	.8	1.1	1.8	.3	.5	.16	-
Average, "	3.	4.2	6.2	6.5	7.8	10.4	10.	10.4	8.5	8.7	6.1	5.7	3.8	1.4	.6	1.2	.4	.8	.2	.12

The returns are very decided and striking. Families with 6, 7, and 8 children were the most frequent, and were each about 10 per cent. of the whole, so that the three comprehended nearly one-third of all the cases. There was a progressive and steady increase from families with 1, to those with 6 children, and a similar decrease to those with 13 children. In only 3 per cent. was there but one child; and families with 3 children or less formed only 15.4 per cent. of the whole; whilst in 5.2 per cent. the number varied from 14 to 23 children per family. Families having from 5 to 10 children constituted 56 per cent. of the whole. There was not any material difference in the proportion of the two sexes of patients, but the smaller families were more numerous in the parents of the males.

The average number of children to a family was 7.5; and it was almost precisely the same in both sexes of patients.

*Mortality of the Parents' Children.*

40 per cent. of the parents' children had died at the time when the patients were submitted to this inquiry, and of these an equal number was found in both sexes of patients. The average age of the patients has already been stated to be 28·8 years.

## XVIII.

*Order of Birth of the Patients among the Parents' Children.*

Order, .	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
Females, p.c.,	18·6	17·6	14·	10·7	7·1	9·1	6·	3·2	3·	1·	2·	1·3	1·	·32	·32
Males, ,,	21·	15·4	14·2	12·5	11·1	8·	6·2	3·8	3·6	2·	2·	1·4	·24	-	·24
Average, ,,	20·	16·4	14·1	11·8	9·4	8·4	6·	3·6	3·3	1·5	2·	1·4	·5	·13	-

Nothing could be more striking than these returns: 20 per cent. of the whole were 1st children, and from that there was an unbroken line of diminution to those who were the 10th children. Those who were 1st, 2nd, and 3rd children constituted one-half of the whole number. The latest was the 15th child; but after the 12th or 13th the number was quite insignificant. There was no material variation in the sexes.

Such are the principal facts which have been elicited in reference to the parentage of the patients, and I now proceed to state those which belong to the patient only.

## QUESTIONS AFFECTING THE PATIENTS ONLY.

*Questions affecting the Temperament.**Colour of the Hair.*

The following table represents the frequency with which the shades of colour appeared, arranged in the order of intensity.

## XIX.

Colour, . .	Flaxen	Light	Sandy	Light Brown	Medium Brown	Dark Brown	Chocolate	Black
Females, per cent.,	·25	15·2	1·25	2·2	34·	35·2	5·2	·25
Males, ,,	·33	27·1	6·	3·8	30·8	22·5	6·	2·1
Average, ,,	·3	22·4	4·1	3·2	32·1	27·6	5·7	1·4

The proportion of flaxen and black hair was quite insignificant, but the medium and darker shades of brown contributed more than two-thirds of the whole. If we arrange the shades into three classes, with the medium brown as the central, and the others as the extreme shades, we shall find that the three classes are constituted into nearly equal proportions, as in the next table.

XX.

*Three Classes of Colour of Hair.*

Colours, . . .	Medium	Dark	Light
	Medium Brown	Black Chocolate Dark Brown	Flaxen Sandy Light Light Brown
Females, per cent., .	34·	40·7	19·
Males,       ,,       .	30·8	30·6	37·3
Average,     ,,     .	32·1	34·7	30·

The females presented an excess in the medium and dark shades, whilst the light colours were twice as frequent in males as females. In reference to the separate colours the greatest disparity in the sexes occurred in the sandy hair, which was five times more frequent in males than females; but as the whole number was only 41, perhaps much importance should not be attached to it.

*Colour of the Eyes.*

For simplicity we arranged all colours under three heads, viz.:—grey, including blue; brown, including hazel; and black.

XXI.

Colour, . . .	Grey	Brown	Black
Females, per cent., .	69·2	26·2	·5
Males,       ,,       .	77·1	20·8	·16
Average,     ,,     .	74·	23·	·3

The proportion of black eyes was quite insignificant. The grey shades embraced 74 per cent., or three-fourths of the whole number. The brown colour was more frequent, and the grey colour less frequent in females than in males.

*Colour of Complexion.*

The inquiries had reference to the usual condition of the complexion, and, as already stated, in health only; and only two classes were recognized, viz., florid and pale.

## XXII.

	Florid	Pale
Females, per cent., .	65·	34·2
Males,           ,, .	53·8	44·7
Average,       ,, .	58·8	40·7

The florid complexion was met with in 60 per cent., and the pale in 40 per cent. of the cases, and consequently the former much predominated. The florid was most frequent in the females.

*Habits of Body.*

The inquiry, as originally arranged, embraced four classes, viz., bony, muscular, rounded, and spare; but it was soon found that such a division was impracticable where we had to depend upon statements made in reference to an antecedent condition, and therefore the number was reduced to two—fleshy and spare.

## XXIII.

	Fleshy	Spare
Females, per cent., .	61·9	38·1
Males,           ,, .	37·	63·
Both,           ,, .	46·7	52·9

The two classes were nearly equally divided, but the preponderance was in favour of the spare. There was, however, a very large excess of the fleshy habit in the females, and an equally large excess of the spare habit in the males, and hence the general average is unsatisfactory.

*Coldness of the Extremities.*

The inquiry had reference to general conditions only, and embraced both the hands and the feet.

XXIV.

	Hands alone	Feet alone	Both	Total
Females, per cent.,	1·5	23·7	37·7	63·
Males,       ,,	7·	16·	25·1	48·1
Both,       ,,	4·8	19·1	30·2	54·1

In 55 per cent. of the cases, coldness of the extremities had been habitual, 30 per cent. of which embraced both extremities, and 20 per cent. the feet only. It was much more common in females, except in reference to the hands only. The proportion in the two sexes was 63 per cent. of females, and 48 per cent. of males.

*Temperament.*

The information sought under this general heading had reference to the degrees of susceptibility or excitability, and the answer was derived partly from the answers of the patients, and partly from my own observation of the foregoing facts, and the aspect of the patients. The susceptible temperament largely prevailed, since it was found in 72·5 per cent. of the cases. It was well marked in both sexes, but somewhat more so in the females, since it was found in 74·5 per cent. of the females, and 68·5 per cent. of the males.

XXV.

*Age of the Menstrual Epoch.*

In 4 per cent. of the cases the menses had never appeared.

Aged years,	7,	10,	11,	12,	13,	14,	15,	16,	17,	18,	19,	20,	21,	24.
Per cent.,	·26	·53	4·5	6·2	11·4	18·2	18·2	15·1	8·	6·	3·9	1·3	·26	·26.

The information obtained under this head is very decided. The predominating periods were aged 14 and 15, at both of which the per centage was 36·4 of the whole. At 7, 10, 21, and 24 years the numbers were insignificant, but from 11 to 20 there is an unbroken line of increase and decrease, with the central periods just pointed out. 63 per cent. of the whole had the menstrual epoch at 13, 14, 15, or 16 years of age.

*Irregularity of the Menses.*

This was recorded under four heads, viz., much, frequent, little, seldom, and in their four combinations.

## XXVI.

	Much	Frequent	Little	Seldom	Much & Frequent	Little & Seldom	Much & Seldom	Little & Frequent
Per cent.,	6·	2·5	29·	16·7	1·2	15·2	·5	·25

40 per cent. of those who had menstruated complained of some irregularity having occurred. The most frequent condition was a defect in the function, so that 29 per cent. found it deficient in quantity, and 16·7 per cent. too infrequent in time. In only 6 per cent. was the quantity excessive.

*Leucorrhœa.*

This condition had been persistent in 42·2 per cent. of the whole cases.

*Discharges of Blood.*

The two conditions sought for were hemorrhoids and epistaxis.

## XXVII.

Source, . .	Nose	Piles	Both
Females, per cent., .	9·7	2·2	·5
Males, ,, .	12·	2·	·5

Epistaxis had been somewhat frequent, viz., in 11 per cent. of the sexes combined, and with an excess in males over females. The other source was found in only 2 per cent. of the cases.

## XXVIII.

*Married and Childless.*

	Married	Childless
Females, per cent., .	41·5	12·8
Males, ,, .	45·6	13·1
Average, ,, .	43·5	13·0

43·5 per cent. were married, with a difference of 4 per cent. in favour of the male patients. Of these 13 per cent. were childless, and there was no appreciable difference in the sexes.

XXIX.

*Age when the First Child was Born.*

Aged, .	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	42	43	45
Per cent. Females, .	-	4.5	6.7	6.7	6.7	10.	10.6	14.4	7.5	3.7	3.7	6.7	4.5	7	3.	3.7	1.5	1.5	-	.7	-	-	.7	-	-	-	-
Males, .	.4	.4	.4	2.2	4.4	5.8	11.6	8.1	7.6	8.1	12.6	8.6	6.7	4.4	4.	2.2	.9	.9	.45	1.3	-	.9	.45	-	.45	.45	-
Average, .	.28	2.	2.8	3.9	5.3	7.3	11.2	13.3	7.5	6.4	9.3	7.9	8.7	3.	3.6	2.8	1.1	1.1	.28	1.1	.28	.56	.28	.28	.28	.28	-

The most frequent age was 23, at which period 13.3 per cent. occurred. In the period including 20 and 25 years of age, 51 per cent. of the whole cases were recorded. The extreme ages were 16 and 45 years; but under age 20 only 9, and over 30 only 11.8 per cent. occurred, so that four-fifths of the whole had their first child when between 20 and 30 years of age.

There was a marked difference in reference to the sexes, so that it occurred in the females at an earlier age than in males. 18 per cent. of females had their first child under age 20, and 67 per cent. under age 25, but only 3.4 and 48.7 per cent. of males were recorded at the same periods. The excess in favour of females was thus 14.6 per cent. under age 20, and 18.3 per cent. under age 25.

## XXX.

*Number of Children in each Family.*

Number, .	1	2	3	4	5	6	7	8	9	10	11	12	13	14	19
Females, per ct.,	19·3	18·	9·6	9·6	7·5	6·2	7·5	3·4	3·4	2·	1·3	1·3	-	1·3	1·3
Males, ,,	16·3	23·1	10·9	10·9	7·5	8·8	5·4	4·6	4·6	2·1	·4	·8	1·2	-	-
Average, ,,	23·4	21·	10·4	10·4	7·8	7·8	6·2	4·7	4·7	2·	·78	1·	·78	·5	·5

The per centage is reckoned only upon those patients who were married and had had children. The number of one and two children in a family so greatly preponderated as to constitute 44 per cent. of the whole, and to cause a marked line of division between the numbers of two and three. The number of families with three children was not the half of those with two children; but from that number the frequency gradually declined, until ten children were found in a family. There were two families with nineteen children in each; but families with more than ten children were found in only  $3\frac{1}{2}$  per cent. of the cases. Families with three or fewer children were met with in 55 per cent. of the whole. The average age of the persons included in this list was 28·8 years. The greatest number of families with one child was found in the females.

## XXXI.

*Number of Children now Dead.*

	Now Dead
Females, per cent., .	43·7
Males, ,, .	31·7
Both, ,, .	38·

The number of children born in each family gave an average of 4·0, and it was precisely the same in each of the sexes. The division of the children into those then living and dead was not made in the early part of the inquiry, so that we have been compelled to exclude 7 per cent. from this analysis. Of the remaining number, 38 per cent. had died at the period of inquiry, and the excess on the part of the children of females was no less than 12 per cent.—43·7 per cent. of the children of females, and 31·7 per cent. of those of males having died.

*General Health of the Children.*

This inquiry was one of a general nature only, and such as any patient would be prepared at once to answer. In 43 per cent. of the cases the general health was feeble, and chiefly on the female side, for the precise per centage in the two sexes was 48.7 in females, and 37 in males.

## XXXII.

*Frequency and Number of Abortions.*

Number of Abortions, . . .	1	2	3	4	6	8
Per cent. of those who had miscarried, . . . . }	44.7	37.3	3.4	2.	1.	.5

Abortion had occurred in 46.2 per cent. of the child-bearing married women; the number of abortions which each of such patients had suffered varied from 1 to 8. Of these, one abortion was found in 44.7 per cent., and one and two abortions comprehended 84 per cent. of the cases included in this list.

## XXXIII.

*Smoking and Immoral Conduct in Male Patients.*

	Smoke	Drank	Bad life for a period	Syphilis		Gonorrhea			Both Syphilis and Gonorrhea included in the fore- going
				Once	More	Once	Twice	More	
Per cent.,	48.	24.5	29.6	14.	2.	29.5	5.	4.	11.5

Nearly one half of the cases had smoked tobacco for various periods; one fourth of the cases had drank to excess; and 29.6 per cent. had led a bad life, in various ways, at some period; but usually for two or three years before twenty years of age.

*Syphilis* and *Gonorrhea* had occurred in 27.5 and 50 per cent. of the cases, of which 11.5 per cent. had both been found in the same person. The diseases had been contracted more than once in 11 per cent. of the cases; and, in a few, they had occurred five times and upwards.

Careful and private inquiries were instituted to determine the frequency of sexual abuse in early life, masturbation, and seminal emissions; and it was found that *sexual abuse* had occurred in 11.6

per cent., *masturbation* in 18·2 per cent., and presumed *seminal emissions* in 22 per cent. The two former were, for the most part, found before age 20, but the latter prevailed chiefly at a later period. The age at which these occurred was recorded in the inquiries.

### *Late Hours and Anxiety.*

The occurrence of late hours was partly due to necessity, and partly to vicious habits. It occurred in 19·3 per cent. of the whole cases, but it was four times more frequent in men than women. The per centage was 7, and 27·5 in the two sexes. Anxiety was experienced in a degree fitted to injure the system by 22·2 per cent.; and of these, 32·5 were women, and 15·3 per cent. men; showing a very large preponderance in females.

### *Evils of Occupations.*

70 per cent. complained of some injury inflicted by their occupation. This was made chiefly by the males, of whom 85 per cent. had suffered; but 49 per cent. of the females also attributed much importance to it. The causes assigned were very various; but certain were specifically inquired into, and others were included under one general heading.

#### XXXIV.

Cause, . . .	Dust and Fumes	Long Hours	Bending Posture	Close and hot room	Exposure	Great application	Other Causes
Females, per cent.	2·2	20·5	13·5	19·	16·7	6·5	3·5
Males, „	24·8	34·	24·3	28·	42·3	6·1	8·3
Average, „	15·8	28·6	20·	24·4	32·1	6·3	6·4

The most frequent source of injury was exposure, which occurred in 32 per cent.; after which came closely long hours and close and hot rooms. Bending and dust were injurious in 20 and 15·8 per cent. respectively. In only 6·3 per cent. had there been unusually close attention to business; and an equal proportion complained of a miscellaneous list of evils, as standing, carrying weights, ascending steps, talking, bad odours, damp climate, steam, hot lime, pressure on the chest, and rowing. Several of this list of causes occurred to the same individual in a large number of the cases. These ill effects fell with very different degrees of frequency upon the two sexes. It has been already stated, that as a whole, they were much more frequent in men; but the exceptions in favour

of women were the most striking in reference to dust and exposure, in which the per centage in women was 2·2 and 16·7, whilst in men it was 24·8 and 43·2. The frequency of intense application was the same in the two sexes.

XXXV.

*Inhaled or Imbibed much Mercury; Bled at the Arm.*

	Mercury	Bleeding										
		How often, .	1	2	3	4	6	7	8	9	10	12
Females, per cent.,	5·5	Per cent. of those who had been bled, .	57·	21	10	5·	5	2·	—	—	—	—
Males, „	11·3		53·	20	15	4·7	1·9	·9	·9	·9	·9	1·9
Average, „	9·		54·4	20	13	4·7	2·7	1·3	·6	·6	·6	1·3

In nearly all the cases in which mercury had been largely taken there had been salivation; but in some instances the mercury was known to have exerted an injurious influence, although short of this by its employment in their occupation. In 9 per cent. this evil had occurred, but the per centage was twice as great in males as in females. General bleeding had been practised in 15 per cent. of the cases; and this also was much more frequent in males. The number of occasions on which the same patient had submitted to the operation varied from one to twelve, but in both sexes more than 50 per cent. of those who had been bled had only had one bleeding.

*Perspired Very Readily. Not Worn Flannel Shirts.*

In 25·4 per cent. the patients had evinced an unusual readiness to perspire throughout life, and the proportion was only slightly greater in males than females.

The inquiries in reference to the use of flannel were made under two heads, and included a period of six months; for, as the inquiries were not necessarily made on the day on which the patient first presented himself at the hospital, it was probable that the disease might have existed when the use of flannel had been so recently adopted. In 14·4 per cent. flannel had never been worn next to the skin, and the omission of it was more than four times more frequent in women than in men. 10·5 per cent. had only worn it six months or less: so that if we add the numbers together it may be stated that 25 per cent. had not usually worn flannel on the skin.]

*Feeble at Birth. Drynursed.*

A few persons were unable to answer the first question, but in

nearly all the information was sufficiently exact. In 24 per cent. the patients had been born of feeble habit, and females had experienced it in the proportion of 5 per cent. higher than males. The proportion of cases which had been drynursed was insignificant, viz., 2·5 per cent.: and it was the same in both sexes.

*General State of the Health.*

This inquiry embraced the periods of childhood, puberty, and adolescence.

XXXVI.

	Good always	Not Good			
		To age 3	To age 14	To age 21	All the Life
Females, per cent.,	66·5	14·7	17·5	21·5	11·5
Males,       ,,     .	86·5	7·8	7·6	8·8	4·8
Both,         ,,     .	78·5	10·6	11·6	13·8	7·5

78·5 per cent. had always experienced ordinarily good general health, whilst 7·5 had never enjoyed it. Good health was 20 per cent. more common in males, and unbroken feeble health 7 per cent. more frequent in females. In reference to the periods of life when feeble general health prevailed, it may be seen from the table that it was nearly equally distributed over the three periods, but exhibited a tendency to increase in frequency as life advanced. At the period above, aged 21, it was recorded in 13·8 per cent. of the cases.

*The General Appetite for Food.*

This inquiry was made in the same manner as that just recorded.

XXXVII.

	Good always	Not Good			
		To age 3	To 14	To 21	All Life
Females, per cent.,	72·2	11·7	15·	19·7	10·7
Males,       ,,     .	90·	5·6	6·	5·8	4·3
Average,       ,,     .	82·9	8·1	9·6	11·4	6·9

The appetite had been generally good in 83 per cent. of the cases, with an excess in favour of the males of 18 per cent. It had never been good in 7 per cent., with a large excess on the part of the

females. The occurrence of defective appetite at the three ages of life varied from 8·1 to 11·4 per cent., and increased in frequency with advancing age. It was at all periods from two to four times more frequent in females than in males.

*Understood Natural Delicacy of the Lungs.*

This fact was recorded to have existed in 12·6 per cent. of the cases, with an increased per centage on the side of women, viz., 17 in women, and 9·6 in men.

*Hemoptysis.*

This question included the whole life, up to the period of inquiry, when the disease existed in the stage of consolidation or destruction, and the smallest streak was regarded as evidence of hemoptysis. In 32·7 per cent. this sign had never occurred, and it was so uniform in the two sexes as 32·2 per cent. in women, and 33 per cent. in men.

XXXVIII.

PREVIOUS DISEASES.

1.—*Sporadic.*

Age, . .	MEASLES										Not had
	To 2	2 to	5	7	10	15	20	25	30	35	
Females, per cent.	10·1	28·4	22·1	20·3	14·2	2·6	1·1	-	-	-	12·
Males, ,,	6·6	33·6	24·	22·6	10·1	1·7	-	·56	-	·29	18·5
Average, ,,	8·1	31·2	24·3	21·5	9·9	2·1	·48	·33	-	·16	15·9
SCARLET FEVER											
Females, per cent.	3·5	15·3	14·4	22·1	29·7	6·8	4·2	·85	-	·7	57·5
Males, ,,	3·2	28·3	17·6	17·	17·6	3·2	6·4	·81	·16	-	70·6
Average, ,,	3·3	22·3	16·4	19·8	24·	5·	5·4	·8	·8	1·3	65·4
SMALL-POX											
Females, per cent.	10·3	22·5	18·8	16·	14·1	9·4	1·8	·94	-	2·8	63·5
Males, ,,	9·7	26·	17·3	20·4	12·7	8·1	4·	·51	1·5	1·5	57·5
Average, ,,	9·9	24·7	17·8	18·8	13·2	8·3	3·3	·66	1·	1·	59·9
HOOPING COUGH											
Females, per cent.	14·	34·	26·	16·	9·5	·5	1·	·5	·5	-	30·7
Males, ,,	10·	42·4	26·5	13·8	5·	1·2	·84	-	-	-	48·
Average, ,,	11·9	38·8	26·4	15·	7·1	·92	-	·23	·23	-	41·1

16 per cent. of the cases had not had measles; 65·4 per cent. had not had scarlet fever; 60 per cent. had not had small-pox; and 41 per cent. had not had hooping cough. Hence, of these diseases, measles was by far the most prevalent, and small-pox had been nearly as infrequent as scarlet fever. Measles, scarlet fever, and particularly hooping cough, were more frequent in males than females. The age at which these diseases occurred was not sought for in the early inquiries, but there are records of 1,587 instances applicable to our purpose.

In each of the four diseases the greatest number of cases occurred between two and five years of age, and the proportion was: hooping cough, 38·8; measles, 31·2; small-pox, 24·7; and scarlet fever, 22·3 per cent. The earlier period was more frequent in hooping cough, small-pox, measles, and scarlet fever, in their order; and the per centage varied from 12 to 3·3. Cases occurred of each of the diseases so late as from 25 to 30 years, and from 30 to 35 of measles; whilst cases of scarlet fever occurred up to five years later. 85 per cent. of the cases of measles, 61·8 per cent. of scarlet fever, 71·2 per cent. of small pox, and 92·1 per cent. of hooping cough occurred under age ten years. Four cases of measles, three of scarlet fever, and two of hooping cough were known to have occurred twice. Four cases had been inoculated for small-pox. In each of the diseases the number occurring under age two was greater in females than in males.

Especial attention was given to ascertain what ill effects had followed the occurrence of these diseases, and the returns are as follows:—

## XXXIX.

	Measles	Scarlet Fever	Small- pox	Hooping Cough	Total
Number of Cases, . . .	741	404	354	531	2,030
Disease of the Eyes, per cent.,	·8	—	1·1	—	—
„ Ears, „	·26	—	—	—	—
Cough & Dis. of Lungs, „	·93	·71	—	1·1	—
General Debility, „	·4	·71	·84	·19	—
Had them severely, „	·4	·24	·28	·38	—
Disease of the Heart, „	—	·24	—	—	—
Dropsy, „	—	·49	—	—	—
Enlarged Glands, „	—	·24	—	—	—

In but one instance did any recognized ill effect follow in 1 per cent. of the cases, and, therefore, the returns are quite unimportant.

II.—PRESUMED SCROFULOUS AND ALLIED DISEASES.

XL.

	Females	Males	Total
Long continued diseases of the Eyes, per cent.,	4.2	4.6	4.5
"    Ears,       "	.25	.16	.2
"    Bones,     "	.5	.8	.7
"    Joints,    "	1.	.5	.7
"    Glands,   "	14.7	11.5	12.8
Marasmus,       .   .   "	.25	1.	.7
Rickets,         .   .   "	.5	—	.2
Peaked Chest,    .   "	1.	1.1	1.1

In 21 per cent. there had been some member of this class of diseases; and of that 12.8 per cent. alone were enlargement of the glands, and 4.5 per cent. long-continued disease of the eyes; and hence the affections of the ears, bones, and joints, marasmus, rickets, and peaked chest were too infrequent to assume any importance. The affections of the glands were about 3 per cent. more frequent in females than in males, whilst those of the eyes were equally prevalent in the two sexes. No case of rickets was found in the 600 male patients.

XLI.

III.—OTHER DISEASES.

	Females, Per cent.	Males, Per cent.	Average
Inflammation of Lungs, . . .	20.2	14.3	16.7
Rheumatism, or Rheumatic Fever, . . .	14.	15.3	14.8
Fever, chiefly Typhus, . . .	10.	6.6	8.0
Diarrhea, . . . . .	8.5	8.	8.2
Liver Disease, . . . . .	4.5	4.1	4.3
Ague, . . . . .	3.7	6.8	5.6
Fits (nearly all in infancy), . . .	3.5	2.3	2.8
Brain Disease, . . . . .	1.0	.16	.5
Kidney   "   . . . . .	.5	1.5	1.1
Dysentery, . . . . .	.7	1.1	1.
Cancer, . . . . .	.25	—	.1

No instance of insanity or diabetes was found in the 1,000 persons, but some one or more in the list of diseases now recorded

was found in 63·8 per cent. of the cases. The most prevalent diseases were inflammation of the lungs and rheumatism, or rheumatic fever; the former of which had occurred at some period of life in 16·7, and the latter in 14·8 per cent. The former was 6 per cent. more frequent in females, and the latter was a little more frequent in males. After these came fever—chiefly typhus—and frequent diarrhea, each of which occurred in about 8 per cent., with an excess of 3·4 per cent. of fever cases in the females. Ague had occurred in 5·6, and liver affections in 4·3 per cent., with an excess of ague cases in the males. Fits were recorded in 2·8 per cent. As dysentery, kidney affections, brain disease, gout, and cancer had occurred in 1, or less than 1 per cent., we need not enter into any detail respecting them.

Such is a summary of the facts which have been elicited in reference to the second part of the inquiry; and we will proceed to state, in a few words, the leading truths which this extended investigation suggests.

The first question which arises is that of hereditary transmission, either in the sense of absolute transfer of the elements of the particular disease from the parent to the child, or the communication of a state of the system in which disease in general, and this disease in particular, may probably originate. There is a wide difference in these two ideas, and yet it cannot be doubted that they both exist in the minds of various professional men at this day. The former is the older one, and that which the increasing knowledge of our day has rendered less tenable than was formerly believed, since the idea of the transmission of the germs of disease *in utero* is now more strictly limited to such specific diseases as syphilis. Yet it must be admitted, that whilst the growing feeling of the day is in favour of a theory which only implies a defective constitution, there is an under current of belief that this assumes a specific direction in the production of this particular class of disease. Hence, whilst there is a clear distinction in the two theories in statement, there is far more oneness in belief. We will look at them in both aspects.

Feebleness of the general health of the parents existed before the birth of the patient in one-fifth, and throughout life in one-third of all the cases. It is quite certain that the former statement would be under the truth, since the child would only know of such marked deficiency of health as would, in after years, have been

matter of frequent conversation. It is also necessary to consider the two periods together; for although it may be objected that the condition of the health of the parent, after the birth of the child, in no way concerned the health of that child, there is strong presumptive evidence that general feeble health throughout life indicated a condition of the constitution below that of health, and hence would have existed, although it might not have demonstrated itself before the birth of the child. We shall, therefore, more nearly approach the truth if we take the larger per centage to represent the true state of the system, and affirm that one-third of the parents had feeble general health.

The mortality of the parents was such, that one-half of one, and more than one-fourth of both, were dead at the period of the inquiry. Hence, in three-fourths of the cases, one or both parents had died. In the same manner it is shown that in only one-fourth of the cases were both parents living. The value of these facts can only be estimated by considering the age of the child at the period of inquiry, and the age of the parent at the period of death; for it is evident that, as the child was younger or older, so would the parents, in the natural order of things, be living or dead. The average age of the patients, at the period of the inquiry, was 28·8 years. The age of the parents at their death, as ascertained by direct inquiry, was such that one-half of them died between 35 and 55 years of age—that is to say, in middle life; but still a larger proportion died after than before the period, so that some lived to upwards of 90 years, and more than one-third of the whole lived to above the period when the majority died. The proportion of earlier deaths was about one-third of the latter number, and was therefore inconsiderable.

The influence of the acquired causes of disease in the parents has not been inquired into beyond the comprehensive question of unsteadiness of life; and the frequent occurrence of this cause has considerable importance. Of the diseases which had occurred, other than phthisis, we may remark that only rheumatism and asthma were sufficiently frequent to attract attention; and it cannot be presumed that they had any very direct bearing upon the general health of the children. Such diseases as gout, cancer, and various kinds of fevers, were unfrequent; and, with the exception of liver disease, the others were not worthy of attention. Hence, we do not think that these diseases of the parents had either an indicative or causative value in reference to production of phthisis in the child.

It is of interest to remark how prolific were the parents of phthisical patients, for an average of  $7\frac{1}{2}$  children to each family is much greater than that of the general community; and also that, in so large a proportion, the patient was the first or second child.

The importance of the first fact, therefore, extends chiefly to the early period of life, and does not show that it had produced a feeble state of the vital powers, such as might have been inferred if the patients were chiefly the last children born. Neither are we entitled to affirm that the powers of the parents were immature when the patients were born; for the age of the parents, at the birth of these children, shows that they were not largely the product of very early marriages, but they were born at a period of life when, in this country, the body is presumed to have approached maturity. It is true that we have shown that a large proportion of the parents had feeble general health, and therefore it might occur that their period of maturity had been deferred beyond the ordinary period; but if debility of system of the parent be presumed to be a predisposing cause of phthisis in the child, and that debility had existed throughout life, it would be more probable that its effect would increase as life advanced, and be more evident in the children of later years.

Hence, whilst these facts have great interest, I do not think that they help us to any affirmative views of the hereditary nature of phthisis.

The mortality of the children was considerable; since, when the average age of the parents was 28 years, 40 per cent. of the children had died, and that fact would imply the existence of a feeble state of the system.

We may now turn to the other aspect of the question, and show how far a direct transmission of disease might have occurred in the cases in question. It is evident that the solution of this question must rest alone upon the occurrence of phthisis in the parents, since from them alone could the disease have been transmitted. To introduce the occurrence of the disease in the next relatives, viz., the brothers and sisters, would be valueless and superfluous; for, if the proposition were thus—because the brothers and sisters of the patient, as well as the patient, had phthisis, there is a presumption that they had derived it in common from their parents, it would prove nothing beyond what could be derived from the parents alone, by ascertaining their mortality from phthisis, unless we are at liberty to infer that phthisis is a disease which may be

communicated through the parent to the child, without the parent having suffered from it—an inference which, although supported by a few facts, has hitherto found no place in the idea of the hereditary transmission of the disease. So, in like manner, we may discard inquiries into the occurrence of phthisis in the uncles, aunts, and cousins, since we have direct testimony as to the parents themselves.

In only one-fifth of the cases has either of the parents died of phthisis, although they had all lived until middle life; and hence we may support the statement of Professor Walshe, derived from fewer facts, that “phthisis, in the adult hospital population of this country, is, to a slight amount only, a disease demonstrably derived from the parents.” The proportion of deaths from phthisis in these 1,000 cases was, however, somewhat higher than that which is found in the community as a whole.

As a general result of the inquiry under this head, we may affirm that phthisis is not necessarily nor usually a disease directly transmitted from the parent to the offspring, but that in a large proportion of phthisical patients the parents and brothers and sisters had experienced feeble health, and a somewhat lessened duration of life. There was not, however, a majority of the cases so connected.

The next question of interest is the liability of females over males to many of the conditions which have been embraced by this inquiry. There is a singular unanimity in this respect with regard to the most important subjects. Thus, in reference to the parents, more mothers than fathers had children early, had feeble general health both before and after the birth of the patient, and had died early. Of the patients, more females than males had mothers who died early; had most parents, brothers, sisters, and other relatives who had died of phthisis; had parents with one child only; had experienced feeble health and defective appetite throughout life; had been believed to have delicacy of the lungs; were young when their first child was born; had children of feeble health; and had lost most children. Of the less important questions it may be added, that more females than males had suffered from anxiety; had had measles, scarlatina, and whooping cough; had not worn flannel upon the skin; had a very defective education; were of a susceptible temperament; had brown eyes, florid complexion, and fleshy habit; and had experienced coldness of the extremities. Such a preponderance of evils in one sex is most striking, and is

not paralleled by any observation hitherto recorded. It also shows how great is the mother's influence upon the health of the children, and how much greater watchfulness should be exercised over the female part of the population.

3rd.—Of the group of questions which have a direct bearing upon the health of the patients, it may be remarked:—

1. That debility of the general system, both at birth and in later life, was not a marked feature, since two-thirds had enjoyed good health and appetite through life; but the remaining proportion of one-fourth had been feeble from birth. Of the periods during growth, that from *æt.* 14 to 21 had a preponderance of cases in feeble health, but only to a moderate degree. Known delicacy of the lungs was found in only one-twelfth of the cases; coldness of the extremities was experienced in one-half of the cases; and there was a well-marked tendency to free perspiration. Leucorrhœa was prevalent.

2. The menses did not appear too early on the average, neither were they in excess either in time or quantity. Early marriages were not common, but the health of the children was bad and the mortality great in one-half the cases. Abortions were frequent, and the patients were prolific beyond that of the general community. Sterility was found in one-eighth of the married cases.

3. Immorality of life in the males, for a limited period, was frequent. Syphilis and gonorrhœa had occurred and recurred frequently. Masturbation and seminal emissions had been common. The evils attending occupation were very considerable and important, since in two-thirds of the cases they were complained of. Of these, long and late hours, close and hot rooms, and exposure, were the most frequent. Anxiety was prevalent.

4. Of the sporadic diseases of infancy, by far the most frequent was measles; and neither scarlatina nor small-pox had occurred in one-half of the cases. The occurrence of each of the diseases in adult life was recorded, but it was very unfrequent. Evils resulting from these diseases were very insignificant.

5. The occurrence of the evidence of scrofulous disease was very rare, except in the instance of enlarged glands; but it is possible that a different result might be obtained from inquiries made at the children's hospital and in institutions where scrofulous cases are congregated. At the Hospital for Consumption there is shown to be no general or necessary connexion whatever between marked scrofulous diseases and phthisis.

6. Of general diseases, those only which were frequent were inflammation of the lungs and rheumatism.

7. The occurrence of consanguinity in the parents, and of dry-nursing was scarcely found. Asthma was found in one of the parents, and chiefly the mother, somewhat frequently.

I have not, in this summary, entered into a minute analysis of the results obtained in this inquiry, but have selected only those which occupy a prominent place, or may be grouped together. The results obtained will bear, it is hoped, an importance beyond that to which I have applied them, and will be of greater value when similar inquiries shall have been made upon other large sections of the community. Whilst it has been shown that many conditions have less importance in connexion with phthisis than has heretofore been believed, there is much evidence to show that the disease is frequently allied with a state of system defective in vital power and resistance, both of the patient, and his parents, and his children. The large proportion in which none of those states of health could be discovered, is, however, sound proof that phthisical patients are a mixed class, and that the disease arises under very diverse conditions. As to the bearing of this inquiry upon life assurance, I think it may be inferred that there is no such oneness of type of constitution that the most minute historical research could be a sufficient guide as to the future probability of the occurrence of consumption. There is clearly great diversity of causes leading to that issue, and hereditary influence can only be regarded as one of them. If the inquiry could have determined the proportion of persons derived from consumptive parents who would themselves become consumptive, it would have been more to this purpose; but such an inquiry is manifestly impossible. The only safeguard to life offices is, I believe, the estimation, by careful examination, of the degree of health of the proposed assurer; and, above all, the careful examination of the chest by those whose duties make them especially familiar with the subject, and particularly with the early conditions which precede the ordinary manifestations of lung disease.

ART. III—*Cases of Syphilitic Insanity and Epilepsy*. By JAMES F. DUNCAN, M.D., M.R.I.A., Fellow of the King and Queen's College of Physicians in Ireland, Physician to the Adelaide and Simpson's Hospitals, &c.

AMONG the remote constitutional effects of the venereal poison, diseased states of the nervous system occupy a prominent position; yet our knowledge of this most important pathological fact is of very recent date. The older writers on syphilis are entirely silent on the subject; and the treatises and text books in ordinary use, in the present day, either ignore it altogether, or dismiss it with a very cursory remark. Many circumstances have probably concurred to cause the connexion subsisting between the symptoms and their cause to remain so long unrecognised. The late period at which they usually set in, the obscurity in which their origin is involved, and the difficulty of ascertaining the earlier history of a case which may have lasted for years, all combine to account for an omission so little to be anticipated. It is to the late Dr. Todd, of London, and to Dr. Thomas Read, of Belfast, that we are principally indebted for bringing the subject, in its extended relations, prominently before the profession. The former, in a clinical lecture, published in 1851, noticed not only epilepsy and paralysis, as resulting from syphilis, but also a contracted and rigid condition of the flexor muscles of the forearm, accompanied with numbness, which yielded to treatment of a specific nature, after having resisted other remedies. And Dr. Read, whose interesting paper appeared in the February number of this Journal in 1852, further notices the occurrence of insanity, in addition to other forms of nervous disorder.

Since that period numerous essays on the subject, by different authors, have appeared in the journals. Professor McDowell published a case in the *Dublin Hospital Gazette*, in April, 1854; Dr. Chapin, an American writer, details a number of cases in the *American Journal of Insanity*, for January, 1859, in which he traces mental disease to a syphilitic origin; and Messrs. Hutchinson and Jackson, of London, have published a very instructive series of papers in the *Medical Times and Gazette*, for 1861, in which they give the particulars of several cases, illustrative of the protean forms of nervous disease originating in this source.

These references plainly prove how very short a time has elapsed

since the members of the profession became fully aware of the true nature of these affections, and to consider their occurrence as a part of the natural history of syphilis. Even yet there is reason to believe that the broad fact of the existence of such remote consequences, as an effect of the venereal poison, is not so well known to the generality of practitioners as it ought to be. Its importance is too obvious to require to be insisted on, affording the only hope of recovery or amelioration in a class of cases which usually resist ordinary remedies, but which yield, with more or less facility, to the treatment appropriate to the primary affection.

Nor is it certain that cases of this kind are by any means rare; the instances already published would rather lead us to the opposite conclusion. There is abundant reason to believe, that when the attention of practitioners has been more fully directed to this subject, they will be enabled to trace a latent syphilitic taint in many instances, where but for a knowledge of this fact, it would have been supposed that the venereal poison had either worn itself out or been eradicated.

It is not, I think, too much to say, that our knowledge of this important subject is as yet quite in its infancy. What may be the precise nature of the lesion, in these cases, is altogether unknown; whether it be the same in all cases, or whether it may vary; whether it be due to the mechanical pressure of an internal node, producing irritation and inflammation of the arachnoid and subjacent nervous matter, or to some peculiar deposit, corresponding to what takes place from the same cause in other organs, or to some alteration in the nutrition of the part depending upon some change in the arteries of the brain. These are questions which seem likely to occupy pathologists for a considerable time, and to furnish a wide and interesting field for future research. Nor are the mental phenomena observable in these cases a less interesting study to those practitioners who make the phases of disordered intellect their special care. Does the form of insanity which occurs under these circumstances exhibit a uniform character? If not, how does it vary, and is there anything, in the particular aspect of each case, to account for the diversity? Can we predicate with any certainty the nature of the predisposing cause from the phase which the insanity assumes; are melancholia and delirium equally the results of the syphilitic cachexia? Does it produce the tendency to suicide? Does it alter the moral character of the man, making him who was open, affectionate, and generous, reserved, suspicious,

and estranged? Does it lead to the idea of plots and secret conspiracy; or of notions of exalted rank, unbounded wealth, and superhuman power. These, and a multitude of other questions equally interesting to the medical psychologist, must be left unanswered until we have a greater collection of accurately observed facts to draw conclusions from, which shall be deserving of notice.

The following cases are given as a very small instalment to the elucidation of this important subject. They possess, I think, sufficient interest to be laid before the profession; and the success which has attended the treatment, though not all that might be desired, affords the hope that in other instances, when the affection may be earlier recognised and more promptly treated, we shall have abundant reason to be satisfied with the result.

A.B., the younger son of a gentleman of property, some twelve years ago, on arriving of age, contracted syphilis, and placed himself under the care of the late Sir P. Crampton, who gave him mercury, and kept him under it for a long time. His system was severely affected by the medicine; he had sores on the penis, and buboes; but, as far as he can recollect, the latter came on afterwards from exercise in the country. He had syphilis two or three times about the period referred to, but never subsequent to the treatment by Sir P. Crampton. Despising the too common opinion entertained by our countrymen of the unsuitableness of business occupation to gentlemen of his position, he embarked his capital in a trading concern, as emigration agent to America and other places. Meeting with losses in this, he determined to leave the country, and landed in Australia, where he married a healthy woman, beneath him in rank, by whom he had several children, all healthy. Believing that his marriage would be displeasing to his mother and other members of his family, from whom he hoped to receive pecuniary assistance, he determined to conceal it; this, together with the increasing difficulties of maintaining himself by the precarious resources of an adventurer's life, must have preyed heavily on his mind, and predisposed him to the attacks of nervous disease, from which he subsequently suffered. He accepted an appointment in the police, and was necessarily exposed to much hardship. In the year 1854 he had an epileptic fit, but of so slight a character that he paid no particular attention to it; he was unable to account for its occurrence by any special exciting cause. Two years after he had a second, much more severe; and in a year and

a-half later, somewhere about 1858, a third. This last was so severe that he remained insensible for three weeks, and his jaws were closely contracted, so that it was impossible for any food, liquid or solid, to be got down by the mouth, and nutrition had to be sustained wholly by enemata. It was altogether three months before he could leave the hospital. On his recovery he was discharged from his situation, and had to return home. On the voyage he was so ill, I believe from a return of the epileptic fits, that a bet was confidently made, that he would never reach England alive. His wife was left in the colony, to support herself by her own exertions, while he endeavoured to obtain from his relatives the means of maintaining himself again in some other industrious pursuits. Here, according to his own account, he met with innumerable disappointments and delays; at one time a provision would be promised him, but when the time came for its performance, something would occur to prevent it, and so on. Meanwhile, acting, I presume, upon some expectation of this kind being about to be realized, he wrote out for his wife and family to come over. When they arrived they found him still in an unsettled state, without a home to take them to, without means for their support, and without an honourable recognition on the part of his family; his marriage was, therefore, still carefully concealed from every one. During the interval that elapsed, between his return to England and the arrival of his wife, his own health was so impaired that he had to place himself under medical treatment; he was pale, depressed in spirits, suffering from necrosis of the olecranon, nodes upon the cranium, and occasional epileptic fits; for these symptoms he was under the judicious treatment of Mr. Smyly.

About the latter end of August, 1861, as he was crossing over from Liverpool to this city, he suffered from an attack of epilepsy, which was succeeded by a paroxysm of violent mania, in which he had to be restrained by force, to prevent injury either to himself or others. I believe this was the first occasion when any of his fits had been followed by mental derangement. On the 2nd September he was transferred to Farnham House Private Lunatic Asylum. I was absent from home at the time; but I understand that when carried in, such was his state of deep insensibility, that no person who saw him believed that he would leave the place alive. From this, consciousness slowly returned; but the next night he had another attack, of extreme severity, threatening immediate dissolution. For the next six weeks the attacks recurred at short intervals,

with varying intensity, each attack being succeeded, not only by lassitude and exhaustion, but by more or less marked delirium. I saw him about the commencement of October. In the intervals between the fits he was very rational, but desponding; his system, apparently worn out by fatigue and disease, and bearing the unmis-takeable evidences of periosteal inflammation on both sides of the head. There had appeared, too, paralysis of the sphincters, after some of the later fits. Knowing that he had been, for a long time previous to admission, under treatment for tertiary syphilis, and seeing his exhausted condition, I at first thought that any further recourse to mercury would be out of the question, and was satisfied with continuing the treatment previously in use, namely—diffusible stimulants internally, and derivatives to remote organs, to relieve cerebral congestion. Finding, however, that these, though beneficial, failed to remove the liability to a recurrence of the fits, I thought it right to consult Mr. Smyly, his previous medical adviser, as to the propriety of resorting cautiously to the use of mercury. He said it might be tried, but that he thought it would not effect the purpose, as the attacks would be sure ultimately to return as bad as ever; he recommended, however, the use of the citrate of strychnine and iron, as a means of removing the incontinence of urine. This was accordingly tried on the 11th of October, and with the happiest effect; the unpleasant symptom immediately ceased, but the medicine brought on an attack of diarrhea, which led to its discontinuance on the 21st; and on the 26th I resolved to put him on a combination of blue pill, sulphate of quinine and taraxacum—watching its effects. The mercury was given only in one-grain doses, once a day; the nodes on his temple were painted, as they had previously been, with a strong solution of iodine, and his strength supported by nutritious, but not stimulating, regimen. Under this treatment he steadily improved, no unpleasant symptom occurred, his mind cleared up, he had no return of the fits, and he was able to leave the institution early in December. His subsequent history is so far satisfactory. Notwithstanding the continuance of the many sources of mental disquietude already mentioned, he has remained free from any return of his malady, except on two occasions, each of them very trifling; the first, on the 1st of June, lasting only three minutes, and brought on by a dispute with his landlady; the second, the next day, which was equally short, and did not occasion him to fall. Since then he has succeeded in getting some sort of a settlement made with his

friends—he has confided the secret of his marriage to his elder brother, but not to his mother—and he has embarked in an anxious and labourious undertaking in the West of Ireland, connected with the curing of fish.

I am far from looking upon this case as a permanent recovery; but I think the result, when compared with the state in which he had been before the treatment was commenced, is extremely satisfactory. What part of the benefit he experienced is to be attributed to the mercury is a question upon which differences of opinion may be entertained. Undoubtedly the fits had ceased for some days previous to its use; and we all know that epilepsy often undergoes a spontaneous remission which is set down to the operation of some new plan of treatment instituted for the patient's benefit. In this instance I do not think there was anything acting on his mind or his peculiar circumstances to account for the amendment; and I cannot but consider the long interval of exemption, and the extremely mild character of the subsequent attacks, as due to the action of the mineral. His system never was fully brought under the influence of the remedy. Whether it would have been right to have pushed it further than it was used, or whether a more speedy method of administering it should have been resorted to, are points which I will not undertake to determine. I confess I was afraid, in a constitution such as I felt I had to deal with in this instance, either to give it very freely or to push it very far. But whatever I might have felt at liberty to do, had the patient remained in the asylum, I felt it would be highly improper either to retain him there when his reason was restored, or to attempt to carry out a plan of treatment, afterwards, which might have been rendered particularly injudicious by any irregularity on his part in his mode of living when he became his own master.<sup>a</sup>

CASE II.—C. D., aged 42, admitted into Farnham House November, 1861. Contracted syphilis sixteen years ago, which was treated, as far as can be ascertained, by mercury, given unsteadily, and probably without proper precautions. He was supposed to be

<sup>a</sup> Since the foregoing was written, the gentleman called on me twice, November 15 and December 16, 1862, having returned from the West, disappointed in his enterprise, and heavily out of pocket; since his return to town he had one slight attack, on the 13th November, which lasted only a few minutes.

I ought to add, that I consider the syphilitic taint to be due, not to the original infection treated by Sir P. C., but to a fresh exposure, as his wife, *subsequent* to his leaving the asylum, exhibited a well marked venereal ulcer on the right cheek and within the right nostril. She had been previously quite healthy, and the children were perfectly healthy.

cured. Subsequently he married respectably in life, without any ill effect, but had no family. His wife, to whom he was much attached, died a twelve-month previous to admission. His father died in January, 1861, leaving him heir to his landed property and sole executor to his will. This arrangement was made under the impression that he was a first-rate man of business, and that from his living on the spot he would be better able to fulfil the duties of the will than either of his brothers. He very soon, however, began to exhibit unmistakable evidences of insanity, particularly in the random and extravagant way in which he acted—purchasing cargoes of goods totally unconnected with his business, which was that of a miller; buying worthless horses, at a large price, which he did not want, and selling other valuable animals at a dead loss. His conduct in Liverpool was so obviously that of a lunatic, that a friend, seeing the state he was in, had him placed in a private asylum near that town, about the month of June, 1861. He was transferred to Ireland under the idea that he was labouring under softening of the brain, and not likely to recover. At the time of his admission his state was as follows:—He was a large, athletic-looking man, of a slightly florid aspect, with a pinkish-yellow tinge in his complexion, unpolished in his manners, talking a great deal very freely, and in rather a loud tone of voice, but exhibiting no disposition to violence; amiable in his temper, with a large appetite, and disposed to eat rather fast. He had an ugly-looking boil on the right cheek, and an eruption of herpes both on the wrists and chin; on the right temporal bone a faint appearance of a node was to be detected, which was tender on pressure. His conversation partook largely of the character attributed by phrenologists to the organ of wonder. He was constantly boasting of his property and prospects. Of a horse, that he bought for £50, that was fired for spavins at two years old, but which otherwise would have been worth £100—that he has trotted him five miles in 15 minutes—that on one occasion he beat him as hard as he could to make him break his trot, but never succeeded; and that he would bet he would trot 20 miles in one hour, and never break out of his pace. That he intended to study for the bar, and would certainly become Lord Chancellor. That he fully expected to be married to Sir James Graham's daughter, but out of respect to his memory, then only recently dead, he would put it off for three months, &c. Taking into account the fact that a node could be detected on the side of the head, and the possibility that either he had contracted a fresh infection, or that the old

poison, not properly eradicated, had been lighted into fresh activity by dissipation and excitement, I determined to try the effect of a mild mercurial course. He was accordingly put upon a combination of Plummer's pill, quinine, and opium, at night—with sarsaparilla and aqua calcis, in the morning. This was continued for six weeks without any action on the system, but with a very decided improvement in his appearance and mental condition. He no longer talked in the foolish extravagant manner he had done; all his delusions disappeared; his general demeanour became quieter, and his tone more natural. The herpetic eruption, though not entirely eradicated, faded away; and the node lost its prominence, and no longer gave him pain when touched. Satisfied with this improvement, I thought it better to lay aside the treatment, and resort to other remedies which would be free from the objections to which a protracted use of mercury was liable; I am not certain that I acted wisely in this course, for he remains to some extent in an unsatisfactory condition still. He is indolent in his habits—fond of reading, particularly novels; but unwilling to go out or take exercise; he is somewhat bloated in look, with a hepatic tinge of complexion; and is not as attentive to his dress and personal appearance as I am sure he would be, were he perfectly recovered. His delusions are all gone, and his mental powers are fair enough, but the cutaneous eruptions, which were never entirely removed, have again become troublesome. I have, therefore, thought it advisable to resume the former treatment, and push it to a greater extent.

Both the cases just detailed appear, undoubtedly, to be due to the tardy action of an obscure venereal taint. Whether the case now about to be mentioned belongs to the same category is not so certain. In him, as I have been informed, there existed an hereditary predisposition to insanity, on both sides of his family; and there certainly was no trace of any actual symptom to be discovered in his person to prove the fact of his having suffered from it; yet there are grounds of suspicion sufficient to warrant the inference that this is really the essence, or at least a principal part of the essence, of his malady :—

E. T., aged 37, a gentleman in affluent circumstances, about eight years ago proposed marriage to a young lady, whose mother refused to entertain the idea on the ground of her then extreme youth. The gentleman went abroad, and four years afterwards renewed his suit, and was accepted. Two miscarriages, at an early

period of pregnancy, followed in the first year and a-half after marriage. What may have been the precise condition of the fetus I have been unable to ascertain. Neither the lady nor her husband appears to have suffered any symptoms of a syphilitic character. After the second abortion the gentleman began to exhibit such unmistakeable evidence of mental disease, that, knowing the hereditary taint in the family, the lady was advised to live separately, in order to avoid having a family. From eccentricity he passed through the several stages of reckless extravagance, then of wild phrensy—breaking furniture and everything within his reach; then becoming dangerous to himself and others; and, finally, saying constantly to his wife that he must murder her, and making several attempts to do so. He was transferred to Farnham House, September 5, 1862. His state at that time indicated chronic cerebral disease. His head was relatively hotter than the rest of his body, his pulse slightly accelerated; and although there was no appearance of paralysis, his manner of speaking approximated somewhat to that condition. He talked extravagantly of his wealth, his power, and greatness; said he was emperor of all the world; spoke of his coal mines which produced coals worth £500 a-ton; his marble house; his precious stones, &c. These things he repeated again and again at short intervals, and to every one who came to see him. He spoke to strangers as to old acquaintances, and seemed to have forgotten his most intimate friends.

Unpromising as the case seemed, and thinking it was quite possible that there might be some latent taint about him, he was put upon minute doses of Plummer's pill, combined with quinine and henbane—one to be taken each night. These were not taken regularly, for it was not every night he could be induced to take them. They appeared, however, so far to have agreed that the temperature of the head was certainly reduced, though it still remained hotter than natural. This treatment was begun October 16th, 1862; on the morning of the 21st October, five days after it was commenced, his look was observed to be somewhat altered, and he appeared heavy. He eat his dinner as usual, of chicken and bacon, and got a glass of wine after it. This was about half-past 3 o'clock p.m. At half-past 6 o'clock he was seized with a severe epileptic fit; he became deadly pale in the face, frothed at the mouth, his eyes were strongly twisted in the sockets, the pupils dilated, the limbs convulsed rigidly, the surface of the body was warm, but the soles of the feet rather cold. No cause could be assigned for the attack—

the bowels having been freely opened the day preceding the attack, and no change in his condition otherwise having occurred. His appearance at the time was most ghastly. Between the first seizure and eight o'clock he had, in all, seven severe fits; another came at nine o'clock, when some leeches were applied to his temple—(other remedies, including a turpentine enema, having been previously employed); and another during the period of their application. The next day he was much relieved, was quite conscious, knew his wife, could speak freely; his head was still hot, his feet warm, his bowels freely open, but his mental condition as before the attack.

I determined now to push the mercurial; and, in addition to giving him his pill three times a-day, had a scruple of mercurial ointment rubbed in night and morning for several days. He had another and last fit on the 25th of October. His mouth is now slightly under the influence of mercury, the inunction having been stopped since, and his pill reduced to twice a-day. His condition is, on the whole, satisfactory. His pulse is 87, full and soft—his head is scarcely, if at all, hotter than the rest of his body; the secretions are properly performed, there is no paralysis, and his delirium seems to have undergone a remarkable change. He talks much less extravagantly, is quieter in his manner, and less restless at night; but he is still evidently insane. What the issue may yet be remains to be seen; but I think it highly advisable to push the remedy fairly, and to keep the patient's system under it for a time, supporting his strength, as may be necessary, by tonics, good nourishment, and wine.

With regard to the use of mercury in idiopathic epilepsy, I am far from thinking that the effects are such as to justify its ordinary employment. Except for some special complication, it appears to me to be rather prejudicial than otherwise, diminishing the tone of the muscular system, increasing irritability, and depressing the spirits and vigour of the patient. Hence the diagnosis of these cases is always a matter of importance. In the presence of any obvious signs of venereal action—particularly in an active form—no hesitation need be felt as to the propriety of using it with care and becoming precautions; or even when these are absent, whenever the previous history of the patient suggests a probable ground for supposing that such a condition may exist in a latent form; but, under every other circumstance, I think a cautious practitioner would do well to hesitate lest he only aggravate the complaint instead of relieving it. I have said nothing of the use of hydriodate

of potash in these cases—not because I have any doubt as to the propriety and necessity of using it, but because it appears to me to hold rather the second place, in the treatment, to mercury. In the first two of the cases related it was freely used in addition, and, I have no doubt, with advantage; and it is most probable that in due time it will also be employed in the third. But in the crisis of these alarming cases the palm must, in my judgment, be conceded to the older and more energetic remedy.

Comparing these three cases together, and assuming that we have a right to consider the third as an instance of syphilitic insanity, they illustrate the different ways in which the venereal poison acts upon the nervous system. In the first it produced epilepsy, differing in no respect from the ordinary form of the disease, to be succeeded, after years of suffering, by symptoms of mental derangement; in the second, epilepsy did not occur at all; and in the third, insanity took the precedence, and epilepsy followed. With respect to the form of mental derangement presented by these cases, no two of them appear similar. The first was clearly an instance of wild delirium, as transient as it was violent. The other two had a certain resemblance to each other in the acts of extravagance committed, in the style of their ideas and conversation, and in their general quiescent temper. But here the similarity ends. The one exhibited a tendency to violence—to break furniture, to injure, and even murder, his wife—while in the other no such symptoms could be observed.

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ART. IV.—*A Note on Reflex Disease of the Eye, of Traumatic Origin.*

By J. VOSE SOLOMON, F.R.C.S., Surgeon to the Birmingham and Midland Eye Hospital.

*The Mechanical Irritation of an Orbit from which the Globe has been removed is capable of Producing Symptoms of Reflex Disorder in the Previously Healthy Eye of the opposite side.*

W. V., a healthy man, 36 years of age, by trade an iron moulder, received a severe burn of his *left* eye, from the spurting in of some molten iron, on the 1st of July, 1857. He obtained prompt and careful treatment, yet, the vision was lost, and a connecting band

formed between the globe and its lower lid. Early in the following September the right eye suffered sympathetically. It was painful, and there was a sensation of external compression. The vision, which was best in bright light, became, at the same time, disturbed by what appeared to be a cobweb, which constantly floated before the eye. The pain and dulness of sight increased so much that, on the 17th of March of the following year, 1858, the patient requested me to remove the disorganized globe, which was accordingly done by enucleation, in the usual way. The optic nerve was divided close to the globe. In three hours after the operation there was a marked mitigation of the severe cutting pains which had affected the right eye during the last three or four months, and the cobweb (*musca*) appeared to be much smaller. In the course of a short time the band which connected the lower lid to the globe was regenerated, and presented an obstacle to the introduction of an artificial eye. It was therefore divided, and a glass mask inserted in the orbit. The mask excited a good deal of local pain and conjunctival inflammation, which, in its turn reproduced sympathetic ocular disorder of the same degree and kind as had existed before the excision was performed. On the withdrawal of the mask, and subsidence of the conjunctival irritation, the left eye assumed its former condition of usefulness. At the end of a fortnight the mask was once more used, when the sympathetic symptoms reappeared—flashes in the dark (*photopsy*) being superadded. The patient has now for more than four years been engaged in his trade, as an iron moulder, taking the precaution of ceasing work whenever the eye becomes dim or affected with flashes. The sight is generally clear, and he is capable of reading small print without fatigue.

English authors on ophthalmology have hitherto attributed the occurrence of sympathetic traumatic ophthalmia to the commisural arrangement of the optic nerve fibres.

The phenomena presented by the preceding case do not appear to afford a *locus standi* for such theory, inasmuch as the optic nerve on the side of irritation had been severed; but they may be satisfactorily explained on the supposition that the irritation from the eyeless orbital cavity was conveyed by the ophthalmic division of the fifth pair of nerves to the centre, and thence reflected to the opposite side. This view derives support from examples of reflex traumatic disorder wherein the symptoms are purely those of hyperesthesia of the fifth, and which yield, almost *instantaneously*, on removal of the

original source of irritation. Of this class of cases some account is given in a paper which was read by me, before the Birmingham Branch of the British Medical Association, on April 9th, 1857, and published in the journal of that society for June 13th (p. 496) of the same year.

Careful observation of a large number of instances of reflex ophthalmia—a disease of great frequency in Birmingham, and the neighbouring mining districts—has led me to the following, among other conclusions, namely:—that the *primary* traumatic irritation is conveyed to the sound eye through branches of the fifth nerve; that soon afterwards, and sometimes simultaneously, the vaso-motor nerves take on disordered action, and, as a consequence, intraocular congestions and their results occur; that, if the disease be not arrested, the optic nerve fibres become inflamed, or affected with such other changes as induce atrophy, and which lead to similar degeneration of the opposite nerve, attended by an amaurosis, which is incurable. In this stage of the complaint the commisural arrangement of the optic nerve fibres is probably the channel through which the disorder is conveyed.

When the state of the eye admits of its fundus being examined by the ophthalmoscope, in the early stage of reflex ophthalmia, the most constant appearance is congestion of the vessels of the retina, and more especially of the veins; but where there is an advanced amaurosis the usual signs of atrophy of the optic nerve entrance, which are sufficiently familiar to render description in this place needless, are revealed.

ART. V.—*A Case in which a Disease, like Measles, arose from an unusual cause; with some brief remarks.*<sup>a</sup> By HENRY KENNEDY, A.B., M.B., one of the Physicians in Ordinary to Sir P. Dun's Hospital.

THE following case, though but a solitary one, I wish to bring under notice; as it presented some points of curious interest, or even importance. I should state that, at the time of its occurrence, some five months since, I was in total ignorance of its nature. But thanks to our periodical literature, a paper has, since then, come

<sup>a</sup> Read before the Med. Association of the King and Queen's College of Physicians.

under my notice, which has helped to remove the difficulty and make light where darkness had existed. There will be occasion to speak of this paper further on. The case was briefly as follows:—

A young gentleman of fifteen years of age, rather under-sized, but of a high order of intelligence, returned to school after the summer holidays, being then in perfect health. As he entered the school-room one of his play-mates met him, holding a paper bag, with some kind of powder in it, in his hand, and before he was aware, had dashed a handful of the powder in his face; and there can be no doubt that some of it got not only into his eyes, but down his throat—for he was laughing at the moment. The powder turned out to be flaxseed-meal, which, by some accident, the other boy had found in the room.

The result was truly remarkable; the boy was at once seized with smarting and watering of the eyes, running from the nose, cough, and dyspnea. With some difficulty he made his way home—a distance of an English mile. By the time he reached it his face had become much swollen, the eyelids and eyes very red, and the dyspnea urgent. The excitement, too, of the system generally was very great; and all this within two hours of the accident. When seen the following day he had, except the rash, all the look of a boy suffering from a sharp attack of measles. His face was still swollen, his eyes were injected, and had a strange dark-red line round them, giving a very peculiar expression to the countenance; and he had a constant loud cough, with dyspnea. His pulse was 120. Two years previously I had attended him in a well-marked attack of measles, with cough.

On hearing the history of the case, I confess I thought that quiet and a little time would suffice to get him well; and so he was only directed to inhale the steam of boiling water; and, as his distress was referred mainly to the larynx, a small mustard poultice was directed to be applied over that organ night and morning. In this expectation, however, I was much disappointed; and finally, after waiting a few days, when a considerable amount of general bronchitis had supervened, I was compelled to treat the case as if it were ordinary measles, by salines, including tartar emetic, and blisters; and by the end of three weeks, and not till then, could he be pronounced well. The last symptom which remained was dyspnea; for this he got small doses of the oxide of zinc with markedly good effect. The boy is now perfectly well.

This case I set down at the time of its occurrence as anomalous—

for I could scarcely believe that such symptoms would follow such an accident; but, on the other hand, the accurate history given me, and the direct connexion between the accident and the immediate supervention of the symptoms, could barely leave a doubt that the two stood to each other as cause and effect. And so matters remained, and the case had got quite well, when the paper already referred to came under my notice. This paper will be found in the *American Medical Journal* for July, 1862, its title being—"Remarks on Fungi, with an Account of Experiments, showing the Influence of the Fungi of Wheat Straw on the Human System; and some Observations which point to them as the Probable Source of 'Camp Measles,' and perhaps of Measles generally. By J. H. Salisbury, M.D., of Newark, Ohio." Some of the cases given in this paper had been transferred to the *Dublin Medical Press*, and there caught my eye. Its general tenor is to show that soldiers are very liable to a form of measles when obliged to sleep on straw which is old or musty; and two striking examples are given where large numbers of men were so attacked, measles not being in the camp at the time. The author then goes on to state that he treated straw in such a way that it became mouldy within 48 hours; in other words, fungi, of which accurate drawings are given, were produced. With these fungi he then inoculated some 13 persons, the result being that, within two days, a disease exactly like measles in some, including the rash, followed.

These experiments appear to me to prove conclusively that the fungi of musty straw are capable of generating a disease which it seems next to impossible to distinguish from measles. It may be well to give one or two of the cases, condensed for the sake of brevity:—

"CASE.—At 10 o'clock, p.m., February 11th, 1862, I inoculated my arm with the spores of the fungi of wheat straw. The straw was the same kind as that used for beds at the camp.

"Wednesday 12th.—Perfectly well; no inflammation at the point of inoculation.

"13th.—Very slight redness and itching at inoculated point.

"14th.—Got up with a feeling of lassitude and nausea; redness and itching on the increase; had difficulty in keeping warm; occasional sneezing; eyes sensitive; a peculiar feeling about the scalp.

"Saturday 15th.—Lassitude, sneezing, &c., continue, with flashes of heat over the whole body; inflammation of wound on the increase; the peculiar burning congested feeling over the scalp has also in-

creased, with pains through the forehead and temples; a few blotches have made their appearance on the face and neck; eyes weak and inflamed; a heavy oppressive feeling about the chest; and the throat dry and irritated, as if I had a severe cold."

It is enough to say, that all the symptoms detailed continued with considerable intensity till Wednesday, 19th February, when the writer found himself much better. He then again inoculated himself, but with no result whatever. The next case he gives is that of his own wife, who, on the second day after the inoculation, began to suffer from severe cold, causing hoarseness and great constriction of the throat, with very considerable fever, sneezing, and sore eyes; also a slight rash visible. These symptoms lasted a week, and subsided gradually; the attack having passed downwards, as it were, to the stomach and bowels.

There are also cases given in the paper where this artificial inoculation, as it may well be called, seemed to act as a prophylactic, by saving children from the ordinary measles, which disease was in the house at the time. But this point is only alluded to here to show the extent to which the author has carried his investigations. It is now very many years since Darwin, if I recollect right, proposed that the tears of those affected with measles should be used for a similar purpose.

To the facts detailed in this paper the case which came under my own notice is now to be added; and, no matter in what aspect it is viewed, it seems to me to open up a question of the greatest interest and extent. For if there be other agents than the fungi of wheat straw capable of generating a disease like measles, where will such powers end. All vegetable and animal substances, too, while in a state of decay, are known to become mouldy—producing fungi or spores; and to such an extent does this go, that even living beings, including ourselves, when in bad health, almost constantly produce them. The revelations of the microscope are, in this point of view, truly startling; showing us that diphtheria, and some of the most inveterate diseases of the scalp have the closest connexion with cryptogamic growths. The potato and vine-blight, too, come exactly within the same category; many other examples might be enumerated; and I would refer any one particularly interested in the subject to a paper published in *McMillan's Magazine*, for October, 1862. True it is, that in all these instances the fungi are the result, not the cause, of disease. But what I now wish to call attention to is the great universality

of these bodies, whether of animal or vegetable origin, coupled to the fact, which may be considered as absolutely established, that some of them, at least, are capable, when applied to the human frame, of generating disease. And if we farther reflect on the great facility with which these bodies may gain access to our frames, either in our food or the air we breathe, we have a source of disease opened up of which the importance can scarcely be over-estimated. For a long period the opinion has prevailed that epidemics are caused by some such bodies as these. But proof was wanted in support of this idea; and here now we have gained the first step. For it must be repeated again, the experiments of Dr. Salisbury are conclusive:—That certain bodies which are being constantly generated in vegetable matter, are capable of causing certain diseases when inoculated into the human frame. Nay, further, that inoculation is not essentially necessary; and on this point the case detailed by myself seems to be most important, for it shows that the mere contact of fungi with the mucous membranes is sufficient to cause disease, and of a very severe character.<sup>a</sup> The case also proves that other fungi than those of wheaten straw are capable of inducing an affection very like measles. This last point opens out a field of the very widest for investigation. Thus measles presents itself to our notice under different forms. We have this disease with and without cough; a distinction long recognised,

<sup>a</sup> Some may think that the case given by myself may be explained in a different way; that the symptoms may have been caused by the mechanical effects of the meal, and arose too soon to attribute them to the effects of fungi. This view of the case may, of course, be held; but the following reasons induce me to keep to that stated in the text:—It was clearly established that the meal thrown in the patient's face was mouldy; and since then, my friend Dr. Kidd, the present editor of this Journal, has succeeded in bringing meal of the same kind into a similar state, and, by means of the microscope, detecting in it fungi very like, if not identical with, some of those figured in the plate of Dr. Salisbury. These fungi Dr. Kidd showed myself; so that the fact is absolutely established, that fungi may have existed in the meal used by the boy in the school. But then, it will be said, the effects of the fungi arose too soon, for the symptoms were immediate. This I think may be questioned. There is certainly no comparison whatever between the effects of inoculation on the skin and on a mucous surface. If a poison, like putrid pus, be applied to the eye, will it not begin to act at once; and so of the mouth, nose, and stomach. I have seen a sore throat begin at once, from inspecting the same in another. Are not all the stronger poisons, such as corrosive sublimate, arsenic, &c., instantaneous in their action, provided the dose be large and the stomach empty. Nor is it to be forgotten, that in the case detailed, the dose, if I may so speak of it, was large, and applied to the eyes, nose, and mouth at the same moment. For these reasons, then, I consider this case an example of a disease, like measles, being caused by the application of the fungi which are produced in flaxseed-meal which had become mouldy.

and, I believe, correctly. Again, at some periods the throat is very much engaged, and at others quite free; and I myself have seen measles rendered most serious by its complication with acute dysentery. May not such differences, or more correctly varieties, arise from different fungi? One kind prevailing at one period, and a different kind at another. Or may not the way by which the fungi get into the system cause a difference in the results? Thus, in the case I have just detailed, the eyes, mouth, fauces, and wind-pipe were naturally the parts which suffered—the irritation thence spreading to the lungs. But if, in place of this mode of ingress, some of the meal had been at once taken into the stomach, what might not then have been the consequence? Would it have been dysentery or other intestinal irritation? Though, with our present knowledge, these questions cannot be answered, they yet seem to me all-important; and, no doubt of it, the time will come when they will be cleared up, and so a great step gained in practical medicine.

Other considerations arise out of the foregoing statements. Thus they afford a reasonable solution of the cause of certain diseases—as, for instance, the hay-fever or asthma; and may not the affection known as influenza come into the same category? The strange effects, too, of certain substances in the form of powder, of which ipecacuanha is a good example, may result from the same agency; and when smells or odours are of such a kind as to create fainting, nausea, or even vomiting, are there not good grounds now for supposing these may be due to certain particles floating about in the air, and necessarily taken into our frames?

Nor, in a practical point of view, are the preceding facts of less moment; and the following deductions may, I think, be fairly drawn from them:—

1. That certain acute diseases affecting the throat and air passages may be caused either by inoculation of certain vegetable fungi or by direct contact of the same with the mucous membranes.

2. That, as far as is yet known, the diseases so produced seem to have the closest resemblance to measles.

3. That the vegetable fungi which have been long admitted to exist in certain chronic diseases, as those of the skin, show an impaired state of the constitution; and hence the importance of combining a constitutional with a local treatment in their management.

4. That when vegetable fungi cause disease by coming in contact

with the mucous membranes of the head and chest, we have now fixed data for the administration of emetics; which, by their direct effects, may thus cut short disease in its early stage.

P.S.—A second paper, by Dr. Salisbury, has, I find, been published in the *American Journal* for October, 1862. It is also a very valuable communication, as showing, and in a very clear way, the prophylactic power which the inoculation of straw fungi exercises over the human frame, even when exposed to the contagion of ordinary measles. But as this part of the subject does not come within the scope of my present remarks, I can only refer my readers to the paper itself for the details, which are of high interest.

ART. VI.—*On the Phenomena of Diabetes Mellitus*. By the REV. SAMUEL HAUGHTON, M.D., F.R.S., Fellow of Trinity College, Dublin.

## PART II.

(Continued from Vol. xxxii., p. 277.)

IN the former part of this paper<sup>a</sup> I gave an account of three cases of diabetes mellitus, in which I attempted to ascertain the excretion, both of sugar and of urea, and from which I deduced certain conclusions, to which, of course, the same value cannot be attached as to the observations themselves.

I shall now add three more cases of this disease, from which the same general conclusions may be inferred:—

For the clinical observations on these cases I am indebted to A. W. Foot, M.B.; and to Doctors Stokes and Hudson, Physicians to the Meath Hospital, for permission to make my observations, and for many valuable suggestions during their progress. I made, myself, all the determinations of sugar and urea in the laboratory of Trinity College.

CASE IV.—Thomas Cooke, aged 40, admitted into the Meath Hospital October 1st, 1861, under Dr. Hudson.

<sup>a</sup> D. Q. J. M. S., Vol. xxxi., p. 317, and Vol. xxxii., p. 265.

*History of Case.*—Is a labourer, and comes from Co. Leitrim; married, of temperate habits, and excellent previous health; no history of hereditary predisposition.

Jan. 1860.—“Got a cough;” spat blood; in latter end of July, 1861, cough returned, and he spat blood, and became affected with great thirst and diuresis; “at the commencement of this cold his urine was not clear;” but three weeks before admission he passed a quantity of urine, estimated at three quarts, clear and sweet (*teste linguâ*); the quantity of urine now voided is much less, and of deeper colour, “because he stints himself in drink.”

Since July his appetite has been bad, his strength and flesh rapidly diminishing.

*Condition on Admission.*—Passing saccharine urine, sp. gr. 1042; no albumen; of clear gold colour; thirst excessive.

*Heart.*—Situation, impulse, sounds, normal; pulse, 91, regular.

*Lungs.*—Percussion clear, before and behind, over each lung; and respiration healthy, except under right sterno-clavicular articulation, where it is rougher than natural; bowels habitually costive; tongue dry, red at tip and sides; posteriorly and in centre a dry brown fur; sordes collect on teeth and lips; “bad taste in mouth continually;” gums spongy and bleeding; appetite bad; skin generally dry, but perspires occasionally; peculiarly greasy between shoulders, and on back generally; has remarked so himself; sleeps well.

*Clinical Observations.*—On the 8th of October it was discovered that there was fluid effused in the cavity of the peritoneum; the superficial epigastric veins on each side were enlarged and prominent; defecation was attended with pain in the lumbar region, and retraction of the testicles, and the spleen was found to be enlarged; the veins of the left leg and thigh were varicose; copious perspiration comes on while he is straining at stool.

October 9th.—Edema appeared in both legs, but subsided in a few days; reappeared in right leg on 31st.

November 2nd.—He showed an anthrax forming on outside of right thigh, which, on the 5th, was opened by crucial incision down to the fascia, and bled freely; diarrhea began at this time, and appetite commenced to fail.

November 12th.—Retention of urine required use of catheter, and about 30 oz. were drawn off from the bladder; this operation

was performed also on 13th, 14th, and 15th; the effusion into the peritoneum became increased.

November 18th.—Diarrhea occurs every night; bowels moved every hour; can pass urine without catheter, but with much exertion; suffers much from pain in loins; the diarrhea was very rebellious to treatment; he was subject to occasional profuse perspirations, especially when at stool.

His appetite was very variable, but not at all excessive, nor by any means equal to the usual appetite of this disease. Sometimes he ate his allowance of bread, sometimes half of it, or none.

The following observations were made during his stay in hospital:—

(a) 2nd, 3rd October, 1861.—Weight (naked), 146 lbs.; passed 110 oz. fl. of urine, of sp. gr. = 1039·08; sugar = 4010 grs.; urea = 722 grs.

*Previous Daily Food.*

Bread, 8 oz., . . .	134 grs. urea,	. 2377 grs. sugar.
Milk, 1 pt., . . .	58 „	. 177 „
Tea, 1 pt., . . .	5 „	. x „
Porter, 1 pt., . . .	27 „	. 15 „
Oatmeal Broth, 1 qt.,	46 „	—

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**270 grs. urea.      2569 grs. sugar.**

(b) 8th, 9th October.—Passed 70 oz. fl. of urine, of sp. gr. = 1042·78; sugar = 2553 grs.; urea = 674 grs.

Previous daily food same as before.

(c) 15th, 16th October.—Weight = 145 lbs.; passed 90 oz. fl. of urine, rancid in smell; sugar = 2461 grs.; urea = 709 grs.

*Previous Daily Food.*

Bread, 12 oz., . . .	200 grs. urea,	. 3566 grs. sugar.
Mutton, 8 oz., . . .	368 „	—
Milk, 1 pt., . . .	58 „	. 177 „
Tea, 1 pt., . . .	5 „	. x „
Eggs, 2, . . .	92 „	—
Porter, 1 pt., . . .	27 „	. 15 „
Oatmeal Broth, 1 qt.,	46 „	—

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**796 grs. urea.      3758 grs. sugar.**

(d) 23rd, 24th October.—Passed 64 oz. fl. of alkaline urine; sugar = 1666 grs.; urea = 896 grs. Previous food same as before.

(e) 29th, 30th October.—Weight = 145 lbs.; passed 68 oz. fl. of alkaline urine; sugar = 1750 grs.; urea = 714 grs.; phosphoric acid (combined with earths = 16·06 grs., with alkalies = 22·73 grs.); total = 38·79 grs. Previous food same as before.

(f) 5th, 6th November.—Passed 51 oz. fl.; sugar = 1115 grs.; urea = 558 grs. Appetite fallen off.

A large anthrax, which had formed on the back of the right thigh, was opened this morning (6th November), and bled freely; I took the opportunity to collect the blood for the purpose of examining it carefully for sugar. One ounce of this blood was evaporated to dryness at 212° F., reduced to powder, and percolated with alcohol (of sp. gr. 0·828), which did not dissolve the dextrine; I examined it for sugar with the cupro-potassic solution, and weighed the oxide of copper, which I found to be 0·95 grs.

As one ounce of sulphate of copper is used to make 12630 grs. of this solution, of which 1000 grs. are equivalent to 5 grs. of glucose; we readily find the following chain:—

	1 oz. blood.
100	95 grs. oxide of copper.
40	125 grs. sulphate of copper.
7000	16 oz. „
1	12630 grs. standard solution.
1000	5 grs. glucose.
<hr/>	
	<b>0·428</b> grs. glucose.

From this it is easy to calculate that there is 0·98 of a grain of glucose in every 1000 grs. of blood. At the time when the blood contained this quantity of sugar, 51 oz. fl. of urine contained 1115 grs. of sugar, or 21·863 grs. per ounce; dividing this by 0·428, the quantity of sugar in the ounce of blood, we find the fraction  $\frac{1}{51}$ th, to represent the dilution of sugar in the blood, as compared with that in the urine. I found, in the case of Owen Murphy, a theoretical dilution of  $\frac{1}{43}$ nd, from the measurement of the aorta and renal arterics; and it must be admitted that the present experiment falls in with the filter theory of the action of the kidneys.

(g) 13th, 14th November.—The catheter had to be used during the day; by means of it 40 oz. fl. were drawn off, which contained, sugar=1000 grs.; urea=682 grs. I obtained this day  $1\frac{1}{4}$  oz. of blood by cupping, which I boiled and washed on a filter, with boiling water, passing the droppings into strong spirit, to coagulate the dextrine; this I afterwards collected on a weighed filter, and

found it to weigh 0·30 grains. From this it may be inferred that 1000 grs. of blood contained 0·548 of a grain of dextrine.

(h) 20th, 21st November.—Passed 40 oz. fl. of urine, sugar=795 grs.; urea=560 grs.

Shortly after this period Cooke left the hospital, at the desire of his friends, who wished him to settle his affairs, and returned to the country (Co. Leitrim); I have not been able to ascertain what became of him.

Mr. Foot has supplied me with the following table:—

*Thomas Cooke.*

1861	Urine		Weight (naked)
	Oz.	Sp. gr.	lbs.
Oct. 2, 3	110	—	146
„ 13, 14	70	1040	—
„ 14, 15	100	1039	—
„ 15, 16	90	1042	145
„ 16, 17	80	1045	—
„ 17, 18	60	—	—
„ 18, 19	80	1038	—
„ 21, 22	75	1040	—
„ 22, 23	68	—	143·5
„ 23, 24	64	1045	—
„ 24, 25	38	1045	—
„ 25, 26	88	1040	—
„ 27, 28	70	1047	—
„ 28, 29	55	1045	—
„ 29, 30	68	1045	145

*Thomas Cooke—con.*

	Urine		Weight (naked)
1861	Oz.	Sp. Gr.	lbs.
Oct. 30, 31	58	1043	—
Oct. 31, Nov. 1	95	—	—
Nov. 3, 4	80	1043	—
„ 4, 5	40	1045	—
„ 5, 6	51	1043	—
„ 6, 7	40	1045	—
„ 7, 8	58	1040	—
„ 11, 12	60	1040	—
„ 12, 13	30	1040	—
„ 13, 14	44	1043	—
„ 14, 15	48	1043	—
„ 17, 18	30	1042	—

Collecting together the preceding results, we obtain the following table:—

TABLE XIII.—*Case of Thomas Cooke.*

	Date, 1861	Weight	Urine	Sugar secreted	Sugar ingested	Urea excreted	Urea ingested
<i>a</i>	3rd Oct.	146 lbs.	110 oz. fl.	4010 grs.	2569 grs.	722 grs.	270 grs.
<i>b</i>	9th Oct.	—	70 oz. fl.	2553 grs.	2569 grs.	674 grs.	270 grs.
<i>c</i>	16th Oct.	145 lbs.	90 oz. fl.	2461 grs.	3758 grs.	709 grs.	796 grs.
<i>d</i>	24th Oct.	144 lbs.	64 oz. fl.	1666 grs.	3758 grs.	896 grs.	796 grs.
<i>e</i>	30th Oct.	145 lbs.	68 oz. fl.	1750 grs.	—	714 grs.	—
<i>f</i>	6th Nov.	—	51 oz. fl.	1115 grs.	—	558 grs.	—
<i>g</i>	14th Nov.	—	40 oz. fl.	1000 grs.	—	682 grs.	—
<i>h</i>	21st Nov.	—	40 oz. fl.	795 grs.	—	560 grs.	—

In the preceding table it is remarkable that the excretion of both sugar and urea, on Cooke's admission to hospital, was much in excess of the corresponding quantities ingested; showing that the change from his former diet to the hospital diet did not produce immediate effects. In all the experiments, except the first (a), the diet described lasted for the whole week preceding. When his appetite failed, the diet taken could not be well estimated, as it varied from day to day. He presented at this period, and subsequently, symptoms of enlarged liver and spleen, with some dropsical effusion into the peritoneal cavity; which latter symptom, I have no doubt, was connected with the diminished excretion of urea and urine.

CASE V.—The next case that I shall describe is that of a young man, named John Murphy, in whom the predisposing cause of the disease seemed to have been the practice of Onanism; he was under the care of Dr. Stokes, who concurs with me as to the probable cause of his complaint.

John Murphy, aged 25, admitted into Meath Hospital December, 1861.

Has had this disease four months; the canine appetite exists now two months; thirst was the first symptom; has a morning cough and dry skin.

The following observations were made during his residence in the Meath Hospital:—

(a) 13th, 14th December, 1861.—Passed 200 oz. fl. of urine; sugar = 7292 grs.; urea = 919 grs.

*Previous Diet.*

Bread, 1 lb., . . .	267 grs. urea,	. 4755 grs. sugar.
Beef, $\frac{1}{2}$ lb., . . .	368 „	. —
Broth, 1 qt., . . .	46 „	. —
New Milk, 1 qt., . . .	116 „	. 354 „
	<hr/>	<hr/>
	<b>797 grs. urea.</b>	<b>5109 grs. sugar.</b>

With 3 oz. fl. brandy, and 2 grs. of opium.

(b) 20th, 21st December.—Weight = 136 lbs.; passed 273 oz. fl. urine; sugar = 9953 grs.; urea = 1075 grs.

Previous diet same as before.

(c) 8th, 9th January, 1862.—Weight = 134 lbs.; urine = 471 oz.; sugar = 13737 grs.; urea = 1277 grs.

Previous diet same as before, with addition of 6 oz. of bread, equivalent to 100 grs. of urea, and 1783 grs. of sugar; making a total of 897 grs. urea, and 6892 grs. sugar.

(d) 16th, 17th January.—Weight = 133 lbs.; urine = 277 oz.; sugar = 12119 grs.; urea = 970 grs.

Previous diet same as (a) and (b); urea = 797 grs.; sugar = 5109 grs.

(e) 23rd, 24th January.—Weight = 136 lbs.; urine = 233 oz. fl.; sugar = 8321 grs.; urea = 866 grs.

Previous diet same as (c); making urea = 897 grs., and sugar = 6892 grs.

(f) 30th, 31st January.—Weight = 137 lbs.; urine 220 oz. fl.; sugar = 7549 grs.; urea = 866 grs.

Diet same as before, with two eggs; making urea = 989 grs.; sugar = 6892 grs.

(g) 6th, 7th February.—Weight = 136 lbs.; urine = 230 oz. fl.; sugar = 8385 grs.; urea = 1006 grs.

Diet same as last.

(h) 13, 14th February.—Weight = 140 lbs.; urine = 230 oz. fl.; sugar = 8527 grs.; urea = 755 grs.

Diet same as last, with one ounce of brandy added.

(i) 20th, 21st February.—Weight = 143 lbs.; urine = 240 oz. fl.; sugar = 9545 grs.; urea = 997 grs.

Diet same as last.

(j) 6th, 7th March.—Weight = 145 lbs.; urine = 240 oz. fl.; sugar = 9130 grs.; urea = 892 grs.

Diet same as last.

(k) 13th, 14th March.—Weight = 142 lbs.; urine = 220 oz. fl.; sugar = 7700 grs.; urea = 866 grs.

Diet same as last.

(l) 27th, 28th March.—Urine = 190 oz. fl.; sugar = 7557 grs.

Diet same as last

Collecting together the preceding observations into one table, as before, I find the following:—

TABLE XIV.—*Case of John Murphy.*

	Date	Weight	Urine	Sugar excreted	Sugar ingested	Urea excreted	Urea ingested
<i>a</i>	1861. 14th Dec.	—	200 oz. fl.	7292 grs.	5109 grs.	919 grs.	797 grs.
<i>b</i>	21st Dec.	136 lbs.	273 oz. fl.	7953 grs.	5109 grs.	1075 grs.	797 grs.
<i>c</i>	1852. 9th Jan.	134 lbs.	471 oz. fl.	13737 grs.	6892 grs.	1277 grs.	897 grs.
<i>d</i>	17th Jan.	133 lbs.	277 oz. fl.	12119 grs.	5109 grs.	970 grs.	797 grs.
<i>e</i>	24th Jan.	136 lbs.	233 oz. fl.	8321 grs.	6892 grs.	866 grs.	897 grs.
<i>f</i>	31st Jan.	137 lbs.	220 oz. fl.	7549 grs.	6892 grs.	866 grs.	989 grs.
<i>g</i>	9th Feb.	136 lbs.	230 oz. fl.	8385 grs.	6892 grs.	1006 grs.	989 grs.
<i>h</i>	14th Feb.	140 lbs.	230 oz. fl.	8527 grs.	6892 grs.	755 grs.	989 grs.
<i>i</i>	21st Feb.	143 lbs.	240 oz. fl.	9545 grs.	6892 grs.	997 grs.	989 grs.
<i>j</i>	7th Mar.	145 lbs.	240 oz. fl.	9130 grs.	6892 grs.	892 grs.	989 grs.
<i>k</i>	14th Mar.	142 lbs.	220 oz. fl.	7700 grs.	6892 grs.	866 grs.	989 grs.
<i>l</i>	28th Mar.	--	190 oz. fl.	7557 grs.	6892 grs.	—	989 grs.

The weights in these tables are only correct within a pound avoirdupois, as they were not taken with the scales, but by means of a spring balance.

If we take from the preceding table the observations (*e*) to (*k*), inclusive, during which the dynamical equilibrium was established, we find the following results:—

1. The sugar ingested per day was 6892 grs.
2. The sugar excreted per day was 8451 „
3. The urea ingested per day was 976 „
4. The urea excreted per day was 893 „

There is a deficiency here of 1559 grs. of sugar, which it appears to me impossible to account for, except on the supposition that the proteinic compounds were resolved into sugar as well as into urea. In this transformation no carbonic acid is given out; on the contrary, if the view I have advanced—*D. Q. J. M. S.*, Vol. xxxii., p. 269—be correct, a small quantity of carbonic acid is retained.

The following appears to me to be a correct view to take of this case. Assuming the weight at 140 lbs., and the minimum excretion of urea at 2 grs. per pound, we find:—

1. Urea excreted, . . . . .	893 grs.
2. Minimum for opus vitale, . . . . .	280 „
3. Urea produced with glucose from pro- teinic compounds, }	613 grs.
4. Corresponding glucose produced from proteinic compounds, }	3065 grs.
5. Glucose ingested, . . . . .	6892 „
	9957 grs.
6. Glucose excreted, . . . . .	8451 „
Excess to be accounted for, . . .	<b>1506</b> grs.

If this be converted into carbonic acid, and excreted by the lungs, it will give:—

7. Carbonic acid formed from glucose, . . .	2008 grs.
8. Carbonic acid formed with urea of opus vitale, }	1643 „
Total carbonic acid, . . . . .	<b>3651</b> grs.

This is a quantity of carbonic acid less than half of what is excreted in health by a person of 140 lbs. body-weight. Unless, therefore, the deficiency were made up by the combustion of fat, which is quite possible, we should be forced to the conclusion that the excretion of carbonic acid fell far below its natural amount in health.

I made several, but quite ineffectual, attempts to estimate the amount of carbonic acid excreted per day, by the method of Dumas, and others; but came to the conclusion that no result as to quantity is of much value, unless it involve the total amount excreted in 24 hours. This important result has been recently attained by Pettenkofer and Voit, at Munich; and I would venture to suggest to these distinguished physicians the importance of placing a diabetic patient in their celebrated air-chamber for 24 hours, in order to determine with accuracy his excretion of carbonic acid. I feel satisfied that the result would show a serious deficiency, as compared with the excretion of health.

CASE VI.—Owen Butler,\* aged 50, the father of six children,

\* His brother died of same disease after one and a half year's illness.

admitted into Meath Hospital August 1st, 1861; at 12 months before admission the symptoms of this disease appeared; and were attributed by himself to his occupation of threshing, which he has followed for 23 years, working at it from morning till night; has lost flesh, and strength, and eye-sight has grown dim since his illness; hunger is very great; sensation of a tearing in his stomach, and a pain in his forehead, are felt when his appetite is not satisfied; has a craving for fat, and drinks cod-liver oil with avidity. Has found milk to assuage thirst best.

On the occasion of his first visit to hospital the following measurements of his urine were made:—

1861, Aug.	5th, 6th,	390 oz.—24 hours,	1042 sp. gr.
„	„ 18th, 19th,	260 „ „	1043 „
„	„ 21st, 22nd,	270 „ „	1040 „
„	Sept. 3rd, 4th,	205 „ „	1041 „

He perspires at night, often profusely; has no pulmonary symptoms.

Aug.	5th,	ordered Pulv. Dov. gr. x,	ter die.
„	16th,	„ „ „	quinque die.
Sept.	5th,	„ „ „	sex die.

Aug. 19th, weight (naked) 131 lbs.

Sept. 9th, weight 128 lbs. On this day he left hospital in a fit of depression, saying he would go home to die. He has since<sup>a</sup> three times enjoyed and left the hospital, and is soon to return for a fifth visit. When he began to take 40 grs. daily of Dover's Powder he was "heavy and drowsy," and often vomited; but after the dose was increased to 50 grs. per diem he did not vomit, but got drowsy for a short time after each powder, and "started wonderfully in his sleep at night."

Second Visit.—Admitted again in Nov., 1861.

Nov. 28th, 29th,	160 oz. urine,	1047 sp. gr.	131 lbs. wt.
Dec. 13th, 14th,	188 „	1043 „	131 „

Third Visit.—Again in hospital; much emaciated, and feebler than on last visit; weighing 117 lbs. (naked); has pains and coldness in legs and thighs; feels as if his lower extremities were beaten with nettles; œdema sometimes about ankles; bowels moved every second day.

#### *Observations.*

1862, July 27th, 28th,	150 oz. urine,	1043 sp. gr.	117 lbs. wt.
„ Aug. 11th, 12th,	205 „	1042 „	120 „

<sup>a</sup> Written in January, 1863.

Admitted for fourth time, October 25th, 1862. Sight very much impaired; appetite failing; is now little more than ordinary hunger; thick mist before his eyes; legs perfectly cold from knees down; takes violent fits of shivering; sleep broken by starts and involuntary jerking of muscles; gums soft, frequently bleed; has stings of pain along the back, and cramps in his thighs when wakening from sleep; has creeping and tickling sensations in nerves of both upper extremities. Brandy makes him sleep comfortably at night. Skin now always dry and coarse (used to perspire on first visit).

*Observations.*

Oct. 27th, weight 118 lbs. (naked).

Nov. 10th, „ 117 „ „

Left Hospital, December, 1862.

During the time that Butler was under my observation I made the following notes of his case:—

(a) 28th, 29th November, 1861.—Weight=131 lbs.; urine=160 oz. fl.; sugar=5000 grs.; urea=1050 grs.

*Previous Food.*

Bread, 1 lb., . . .	267 grs. urea,	. 4755 grs. sugar.
Beef, $\frac{1}{2}$ lb., . . .	368 „	. — „
Broth, 1 qt., . . .	46 „	. — „
Milk, 1 pt., . . .	58 „	. 177 „
Porter, 1 pt., . . .	27 „	. 15 „
Tea, 1 pt., . . .	— „	. — „

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**766** grs. urea.      **4947** grs. sugar.

(b) 13th, 14th December.—Weight=131 lbs.; urine=188 oz. fl.; sugar=6854 grs.; urea=864 grs.

Previous food, same as last, with addition of pint of milk and pint of porter; making urea=851 grs; sugar=5139 grs.; 3 oz. fl. of brandy and 2 grs. opium also added.

(c) 20th, 21st December.—Weight=129 lbs.; urine=229 oz. fl.; sugar=7156 grs.; urea=1002 grs.

Previous diet same as last.

(d) 8th, 9th January, 1862.—Weight=129 lbs.; urine=180 oz. fl.; sugar=6300 grs.; urea=1102 grs.

Previous diet same as last, with addition of six ounces of bread, making the ingesta—

Urea=951 grs.; sugar=6922 grs.

(e) 16th, 17th January.—Weight=126 lbs.; urine=160 oz. fl.; sugar=6363 grs.; urea=966 grs.

Previous diet same as last.

(f) 23rd, 24th January.—Weight=128 lbs.; urine=205 oz. fl.; sugar=6523 grs.; urea=1076 grs.

Previous diet same as last.

(g) 30th, 31st January.—Weight=128 lbs.; urine=188 oz. fl.; sugar=6854 grs.; urea=1110 grs.

Previous diet same as before, with the addition of two eggs, making the ingesta—

Urea=1043 grs.; sugar=6922 grs.

(h) 13th, 14th February.—Weight=129 lbs.; urine=204 oz. fl.; sugar=7285 grs.; urea=1071 grs.

Previous diet same as last.

Collecting together, as before, these results into one table, we find:—

TABLE XV. *Case of Owen Butler.*

	Date	Weight	Urine	Sugar excreted	Sugar ingested	Urea excreted	Urea ingested
a	1861. 29th Nov.	131 lbs.	160 oz. fl.	5000 grs.	4947 grs.	1050 grs.	766 grs.
b	14th Dec.	131 lbs.	188 oz. fl.	6854 grs.	5139 grs.	864 grs.	851 grs.
c	21st Dec.	129 lbs.	229 oz. fl.	7156 grs.	5139 grs.	1002 grs.	851 grs.
d	1862. 9th Jan.	129 lbs.	180 oz. fl.	6300 grs.	6922 grs.	1102 grs.	951 grs.
e	17th Jan.	126 lbs.	160 oz. fl.	6363 grs.	6922 grs.	966 grs.	951 grs.
f	24th Jan.	128 lbs.	205 oz. fl.	6523 grs.	6922 grs.	1076 grs.	951 grs.
g	31st Jan.	128 lbs.	188 oz. fl.	6854 grs.	6922 grs.	1110 grs.	1043 grs.
h	14th Feb.	129 lbs.	204 oz. fl.	7285 grs.	6922 grs.	1071 grs.	1043 grs.
	Means,	129 lbs.	189·2 oz. fl.	6542 grs.	6229 grs.	1030 grs.	926 grs.

This case presents some features strikingly resembling that of Owen Murphy, particularly as respects the almost complete equality of the sugar excreted and ingested. This, however, I regard as an accidental circumstance, as the excretion considerably exceeded the ingestion in the cases of M'Nee and John Murphy.

Assuming the equality of this ingestion and excretion in Butler's case, we have to account for the excretion of carbonic acid by the decomposition of the proteinic food. This must take place either

by the natural action of health, equation (4), (*D. Q. J. M. S.*, Vol. xxxii., p. 272), or by that of the disease which I have supposed in equation (1), (Vol. xxxii., p. 269); in either case it is insufficient to produce the carbonic acid required.

1. On the supposition of healthy production of carbonic acid, the urea excreted, 1030 grs., would develop only 6043 grs., whereas the lowest minimum of health requires 9100 grs. of carbonic acid.

2. If the proteinic compounds produce both urea and glucose, it can be shown that in this case also the carbonic acid is deficient.

We have on this supposition—

1. Sugar ingested, . . . . .	6229 grs.
2. Sugar abnormally formed with 770 grs [1030 minus 260] of urea, . . . . .	3850 grs.
Total, . . . . .	10,079 grs.
3. Deduct sugar excreted, . . . . .	6542 grs.
	3537 grs.
4. Carbonic acid produced from last found sugar, . . . . .	4716 grs.
5. Add carbonic acid produced as in health, with 260 grs. of urea, min. op. vit., . . .	1525 grs.
	6241 grs.
6. From this we must subtract 565 grs. (equi- valent to 770 grs. urea), retained, . . . .	565 grs.
Total carbonic acid, . . . . .	5676 grs.

Whichever view, therefore, we take of the question, there appears to be in diabetes mellitus a deficiency in the excretion of carbonic acid.

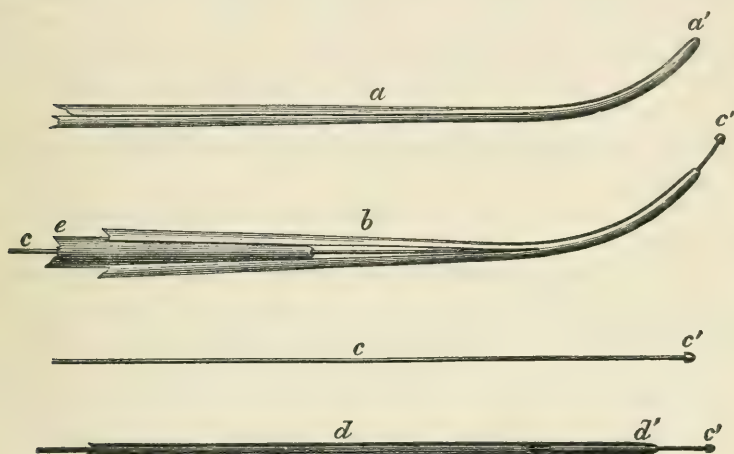
I greatly regret my inability to confirm or disprove this conjecture, which is not without practical interest from its connexion with the theory of phthisis, and I hope others who have the means will not neglect to try the experiment.

ART. VII.—*On the Treatment of Stricture of the Urethra by the more "Immediate Plan."* By PHILIP CRAMPTON SMYLY, M.B., one of the Surgeons to the Meath Hospital.

IN the November number of this Journal, page 297, there is a very able essay on Mr. Bernard Holt's "Immediate Plan," by Prof. Macnamara. I refer to this paper, and also to Mr. Holt's own very interesting book, in order to call the reader's attention to the fact, that in almost every case a certain amount of dilatation was necessary, before the dilator could be introduced. This is indeed self-evident, as the dilator itself is equivalent to No. 3, and many instruments I have seen are so large as No. 4 catheter. In the case of T. N., p. 303, in Mr. Macnamara's paper, I passed No.  $\frac{1}{2}$  for several days before I could get in No. 1, and several more before I could increase the size to No. 3. Even when dilated so far there was much difficulty in introducing the metallic dilator. After the dilator was once in the bladder, nothing could be more satisfactory than the conclusion of the operation, and the whole course of the case. I have since, on more than one occasion, passed No. 11 into this man's bladder without the slightest difficulty. Mr. Holt does not mention, in all his cases, whether he employed this preliminary dilatation or not. In case No. 1 he evidently did not. He says (page 13):—"After the lapse of a third week, and while the patient was fully under the influence of opium, a third attempt was made, but with no better success. I therefore determined to place the patient thoroughly under the influence of chloroform, when, after very considerable difficulty, a No. 1 catheter was introduced; great constitutional disturbance followed, so that a month elapsed before any further instrumental attempt was made. Former experience having shown the improbability of introducing any instrument, excepting while under chloroform, he was once more anesthetized, and the dilator, with difficulty, passed into the bladder." In Mr. B. Holt's hands such a proceeding may be without much danger. But we all know that there are such things as false passages, and also that a very good surgeon *may* make one. And though, as Mr. Holt says, "the operation is of the most simple kind, and any one who can pass a bougie through a *difficult* stricture is competent to perform it," I would ask the young surgeon—or even a somewhat experienced surgeon—if he would not have some hesitation in bursting a stricture with No. 10 or 12 tube, through which he had

forced a metallic instrument, equal in size to No. 3 or 4 silver catheter, the stricture being so tight as only to admit No. 1?

I do not make these remarks in any way to disparage Mr. Holt's plan. My object is simply to call attention to an instrument I have devised, which combines the advantages of Mr. Holt's plan and of the method employed by Mr. Hutton of this city, which is familiarly called the "railway catheter," and has been still further developed, recently, by Mr. Wakley.



(a) The dilator closed.

(b) The branches slightly opened to show the wire guide in the position of the stilette in Holt's instrument. The dilator (e) is not quite pushed to the end.

(c) The guide of silver wire.

(d) No. 1 catheter, either of silver or gum elastic, to which any curvature may be given.

The instrument consists of a No. 1 catheter (*d*), or even smaller, having an orifice at the point. The guide (*c*) is about twice the length of the catheter, and is terminated at the vesical end by a small silver button (*c'*), which exactly fits the orifice of the catheter (*d'*). There is no ring at the opposite end of the guide, so that the catheter may be withdrawn from the bladder without removing the guide.

The dilator (*a*) is, with a few exceptions, similar to Mr. Holt's. The differences are:—1st. There is no stilette; 2nd. The point is perforated (*a'*) to fit the guide I have described above; and 3rd. The point of the instrument is made conical. The shafts are grooved exactly like Holt's, and the arrangements about the handle are identical.

The mode of using this instrument is sufficiently simple. The catheter, armed with the guide, is passed through the stricture into the bladder. The catheter is then withdrawn over the guide which remains in the urethra; the catheter (*d*) is partially withdrawn to show the guide. The dilator is substituted for the catheter, as Wakley would substitute a catheter of a higher number. It is pushed down through the stricture until stopped by the button (*c'*) at the end of the guide in the bladder. The instrument is now exactly Mr. Holt's, and the further steps of the operation, namely, the bursting the stricture, may be completed by passing down any of Mr. Holt's tubes on the guide. I should further remark that the catheter may be either of gum-elastic or of silver.

The advantages of this combination appear to me to be the following:—

1st. The stricture may be dilated at the first passing of an instrument.

2nd. That, with patience and gentleness, a stricture may be passed with No. 1, in very inexperienced hands, where even the most talented surgeon, even with chloroform, would fail to introduce No. 3.

3rd. That a gum-elastic catheter, with a fine stilette, may often be passed into the bladder when it is very difficult or impossible to pass a metallic instrument of the same number.

4th. That, whether the instrument first introduced be metallic or elastic, a certain guide is left behind for the dilator, which can then and there only be forced through a tight stricture without fear.

And 5th. I may add that as the instrument does not require to be so strong as Mr. Holt's, it can be made much smaller in size.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Epilepsy; its Symptoms, Treatment, and Relation to other Chronic Convulsive Diseases.* By J. RUSSELL REYNOLDS, M.D., Lond., F.R.C.P., Assist. Phys. University College Hosp., &c., &c. London: Churchill. 1861.

IT is very creditable to modern medicine that so much labour and patience should have been, during the last few years, expended upon a subject comparatively so ungrateful as epilepsy. But since the publication of Dr. Marshall Hall's work on the neck as a medical region, the contributions to the literature of convulsive diseases have been singularly rich and numerous. The labours of our best abstract pathologists and practical physicians have alike been devoted to the unveiling the obscure origin of these affections, the tracing their remote influences, and the endeavouring to control them by remedies. We need but mention the names of Bernard, Brown-Séguard, Hoffman, Kussmaul, Tenner, Van der Kolk, and of Todd, Winslow, Radcliffe, Sieveking, Richardson, and Reynolds, to instance both the earnest search after scientific truth that so characterizes the foremost of medical workers of the present decade, and the interest attaching to the subject so exceptionally complicated and obscure. The present volume is the last of a series that has materially furthered the progress of theoretic medicine. Dr. Radcliffe's, as is well known, deals with the subject from a theoretical point of view. His notion, that muscular contraction is to be ascribed to withdrawal of nervous influence, and that spasm and convulsion depend, of necessity, therefore, upon defect in nerve power, although foreshadowed by the Germans, is yet sufficiently original to attract for it a very large share of attention. Dr. Sieveking presented us with a compendium which, coming as it did from an observer of so enlarged an experience,

possessed features recommending themselves particularly to the practitioner. Dr. Reynolds avoids the originality of the one, and the didactic style of the other, and furnishes us with a work which is both learned and interesting—impartial, full, practical, and philosophic.

There is one evil attending a “run” on a special subject—an evil which has displayed itself conspicuously in recent medical writings, and which has, in fact, led to the quasi-recognition, under the generic term epilepsy, of many conditions and diseases to which epilepsy is but very remotely allied. The name by which the disease is familiar is appended, in the adjectival form, to distinguish certain other diseases having nothing in common with the former but a certain subjective similarity. Thus, the late Dr. Todd believed gout and diabetes to be very general disorders, and, accordingly, he distinguished, by some facility peculiarly his own, a gouty kidney and a diabetic pneumonia. Similarly he had his epileptiform seizures, his renal epilepsy, and his epileptic coma; and this phraseology—tending to destroy classification, to create a false nosology, and a forgetfulness of idiopathic disease—is now so common that its legitimacy is but seldom suspected. It is in this way that convulsive diseases, from having been termed epileptiform, have got to be thought epilepsy in fact. They may be simply convulsive movements; they may be transient losses of consciousness, or both combined in an undecided form; yet the term epilepsy is indiscriminately applied to all, notwithstanding the origin of them being, for example, in other organs than the nervous—as in the blood, or in the membranes of the encephalon. The disease epilepsy can, in fact, scarcely be said, of modern date, to have distinctive features, origin, or course. It has been disguised under the several forms—centric, eccentric, diathetic, and toxemic, according as such conditions simulating the symptoms of epilepsy proper may have been present, either associated respectively with, or deducing their apparent origin from, disease of the nerve centres, disease of remote parts, or a poisoned state of the circulating fluids.

Dr. Reynolds treats only of simple and idiopathic epilepsy. He takes eighty-eight cases in which he could discover no trace of any other affection than the very remote one to which the symptoms collectively termed epilepsy should be referred. And his plan obviates the discrepancies to which the statements of authors equally able and conscientious are alike liable. If one group of convulsive cases be meningitic, another cataleptic, another diathetic, it is evident

no accurate conclusions can be drawn from observations upon them, undertaken with the view of investigating epilepsy *per se*. Epilepsy may be traced to heart disease, for example. But heart disease is a frequent precursor of dropsy. If, then, it be not observed that the epilepsy is not idiopathic, it might be concluded that dropsy and epilepsy stand to each other in some obscure and interesting relationship. Symptoms cannot, in fact, be taken as a basis of investigation, any more than inflammation can be taken as a groundwork on which to found a distinction between, for example, cancerous and tuberculous infiltrations, either of which may give rise to an inflamed condition.

In most diseases symptoms indicate not simply a morbid condition either of structure or function, but a condition whose primary seat is readily fixed by the indications pathological research places at our disposal, and whose nature may almost be inferred by a recognition of the seat of the morbid process. Sudden and acute pain in the side, with dyspnea, speaks of an inflammation in the lung, or its investing membrane; and pathology reveals at once to us such conditions as naturally bring about the very symptoms that engage the attention. Puffiness under the eyes, with casts and albumen in the urine, lead unmistakably to a recognition of such changes in the secreting structure of the kidney as guide at once to diagnosis, to prognosis, and to treatment. But the nature of the symptoms—epilepsy—the cry, the loss of consciousness, the convulsions—are themselves as obscure as the cause that brings them about.

And an additional difficulty besets our subjective study of this curious disease. These symptoms are not only in themselves obscure, but of inconstant recurrence and simultaneity. Were the cry always heard on the occurrence of an epileptic seizure, we might, we think, have some little ground for concluding that the locus of the disease was in the reflective centre; or were the convulsions accompanied in all cases by entire loss of consciousness, a localization of the starting point to such portions of the cerebrum as would include the hemispheres might reasonably be made. But the cry is often absent. The convulsions are witnessed independent, occasionally, of marked loss of volition; and, doubtless, in the majority of cases, the loss of consciousness occurs independently of either apparent convulsion or spasm.

In considering the symptoms further, we obtain little beyond uncertainty of the nature of the lesion, even though we seize upon the typical form of seizure, standing, as it were, between the one

extreme of disturbed balance of mind, and the other of paroxysms of convulsions without marked loss of consciousness. Such seizure manifests a loss of consciousness, with involuntary muscular actions. But even here these latter phenomena are essentially different in different cases. In the one case there may be local tonic spasmodic movements; in the other, general tonic and clonic convulsions; distinctions which may, in practice, be useful to decide between *le haut mal et le petit mal*, but which evidence, it must be confessed, the almost hopeless character of the pathology of the subject.

Following upon the researches of Dr. Reynolds, we find, in the class of cases undoubtedly epilepsy, the widest possible differences in the muscular spasms in successive attacks. At one time the muscles of the eye only are set in action; at another, and in no observed relationship to the amount of stupor, the entire body is rendered rigid by the universality of the contraction. A special proclivity of certain sets of muscles has been thought to be observed by some observers—the frequency with which epileptics utter expiratory noises pointing to the muscles of respiration. At other times the muscles of deglutition are mainly concerned; and in others, so frequently is trachelismus observed, that, as is very well known, Dr. Marshall Hall considered this symptom capable of affording a most important insight into the pathology of the disease. But Dr. Reynolds inclines to think that this connexion of trachelismus and epilepsy is by no means so intimate as Dr. Hall supposed. Most of the difficulties in the way of forming a rational hypothesis of the nature of the central lesion may, however, be met, as Dr. Reynolds observes, by the assumption, that in epilepsy the loss of consciousness is invariably associated with, and dependent upon, contraction, the result of motor impulse, but that this impulse may be confined to the contractile fibres of the cerebral vessels. The element of spasm need not, in fact, occur of necessity in muscles exposed to observation.

Given, then, the symptoms of the disease, what is the organ wherein these have originated? It was constantly observed that persons dead of epilepsy presented, on *post-mortem* examination, thickening of the cranial bones, calcareous depositions in their fibrous lining, dilatation of the capillaries in the medulla oblongata, structural alterations and enlargement of the pituitary body and pineal gland. By the simple process of induction not a few held to the belief that these changes—effects, in fact, of the disease—were

in reality so many of its causes. But repeated observations have at length fully proved that such lesions, curious as they are, were not only but a few of those which epileptic subjects present, but that they might themselves be absent altogether.

As much interest was created by Wenzel's observations on the morbid conditions of the pituitary body, as has originated, in our own time, in the discovery of the effect of irritation on the fourth ventricle; and not a little remarkable is the fact that, when once the former body was supposed to be affected, enlargement, with alteration of its contents, were never found to be absent. Wenzel made twenty autopsies, of epileptics, from 1804 to 1808, and always found these pathological indications. What a prize for the inductive school. The most subtle of diseases at length found to be also due to anatomical change! Unfortunately the pituitary body, something like the supra-renal capsules of to-day, began to evidence a not inseparable connexion with the disease they were supposed to produce, and the observations of Rokitsansky and Romberg set the theory, as is well known, adrift altogether.

The view of most notoriety that has been propounded by pathologists, next to that respecting the pituitary body—viz., the view of MM. Bouchet and Cazaubieilh—has not, any more than that of Wenzel, been confirmed by experience; and as it has been found that the conditions they observed were not constant, and indeed that epilepsy may occur when the cerebral lobes have been removed—that is, so much of epilepsy as is constituted by convulsions—chronic inflammation of the white cerebral substance can, at best, be considered as a possibly concurrent phenomenon.

It was not one of the least merits of the late lamented Van der Kolk, that, earnest believer as he was in positive pathology, he avoided the error of his school, and hesitated to believe that the alterations in the calibre of the capillaries of the medulla oblongata were any other than proximate results. Doubtless, if these vessels are enlarged, or if granular degeneration be present in a given subject, epilepsy is not unlikely to result as an effect; but neither state holds as a constant element—as an “essential organic cause;” and the true value of his investigation consists, not in the discovery of the changes themselves, but in the observation of the site in which these and like morbid conditions are found to be localized.

In his *Physiologie du Systeme Nerveux*, Georget referred the disease exclusively to the brain. The deduction, apparently simple, was yet one of the highest value, inasmuch, as once conceded, it

restricted the observations of his followers to this organ. Prochaska laid down in his *Memoirs on the Reflex Functions of the Medulla Oblongata and Medulla Spinalis*, quoted by Dr. Reynolds, that the sensorium commune acts independently of consciousness in producing the convulsive movements of epileptics. Van der Kolk advanced a stage beyond this, and deduced, from the observations before mentioned, his belief that the starting point of the various convulsive movements in epilepsy is to be found in the medulla oblongata. The experiments of Marshall Hall, Weber, and Todd have most materially tended to fortify this view of the locality of the immediate starting point of the irritation. That convulsive movements originated in disturbance at the spinal centre, and not in the cerebrum, was shown by Marshall Hall; and while galvanization of the cord itself was found, by Weber, to produce tetanic spasms, while galvanization of the medulla oblongata induced spasmodic phenomena in a clonic form, Dr. Todd's well-known experiments sufficiently demonstrated the share of the mesocephalon and quadrigeminal bodies in bringing about epileptiform convulsions, results, as it is now familiar knowledge, that have been fully confirmed by Kussmaul, and Tenner, and Brown-Séguard.

The locus penitentiae being then fairly assumed, what is the nature of, to use the familiar expression, the irritation that sets out from it? We have convulsions and loss of consciousness, be it remembered. The former is the manifest result of irritation in the medulla, the latter of change in the cerebral hemispheres. Can we trace any mutual interdependence of these? Have we to deal with an anemic or a congestive irritation.

The former question can safely be answered in the affirmative. Irritation propagated along the vaso-motor nerves, from medulla to cerebrum, or *vice versa*. Irritation producing spasm, spasm diminution of calibre in the affected vessels, consequent arrest of circulation and loss of consciousness. But need this spasm be transmitted at all? Does the loss of consciousness stand in fact, though not apparently, in second order of sequence? In other words, does the manifest change in the medulla always precede that in the cerebrum, and yet be always so minute at the onset that its existence becomes only manifest by means of the increased irritation, sufficient to produce spasm, reflected from the centre, whose nutrition it itself disturbed. To confuse us, rather than to guide us to a solution, we have, on the one hand, the difficulty the instantaneous kind of loss of consciousness creates; and, on the other, those minute precursory

muscular movements which indicate, prior to loss of consciousness, a disturbed condition in the functions of the reflective centre.

Congestion has been the favourite condition assumed to constitute the change in which the perversion of function, wherever primarily occurring, consists. For this Marshall Hall argued, more especially in his *Memoirs on the Neck*; and upon the presence of congestion, Dr. Bennett explained not only the loss of consciousness, but the convulsions. We do but follow Dr. Reynolds in remarking that the recognition of congestion, as a primary fact in the pathology of the attack, dates from the time of Hippocrates. With him but few, since the experiments of Kussmaul and Tenner, will be disinclined to agree that such congestion is not only not a primary fact in epilepsy, but that, at the onset of the attack, there is no evidence of it, and that it is not the cause of loss of consciousness. Assume the existence of irritation, and it will not justify the supposition of congestion ensuing. Contraction of the arteries of the pia mater has been shown, by Donders and Callenfels, to follow upon irritation of the sympathetics; and Brown-Séquard has demonstrated that the arteries of the brain meninges contract through reflex stimulation, whose centre is the medulla oblongata. If to these results we couple the observations that Kussmaul and Tenner adduce—that compression of the principal arteries of the neck will produce loss of consciousness and epileptic seizures—we have every reason to conclude that the irritation is brought about by a condition most certainly not one of congestion.

Indeed, by what may be termed synthetical reasoning, this matter has been, in fact, almost set at rest through the converse experiments of Kussmaul and Tenner directed to the investigation of the effects of an induced plethora of the brain. Tying the external and internal jugular veins of some rabbits, they divided the cervical branches of the sympathetic. The respirations diminished from 135 to 18 a minute, the breathing became snoring, and the glottis paralyzed. The animals did not lose consciousness or the power of sitting upright; stupefaction became marked and slight; transient convulsive movements at length succeeded; but all these symptoms disappeared as gradually as they had come on, without the animals having fallen into real epileptic convulsions.

These experiments accord very forcibly with the observation of Romberg—that the epileptic convulsions and coma in plethoric subjects are of a markedly apoplectic character. Indeed it may reasonably be doubted whether the occurrence of such and analo-

gous symptoms in plethoric persons can be termed epileptic. Should they not rather be held to belong to the apoplectic class, characterizing affections possessing in common, unconsciousness, insensibility, and slight clonic spasmodic movements of the limbs, but differing in so far as the state of the respiratory muscles is concerned, and being, in particular, accompanied by paralysis of the glottis, whilst epilepsy is distinguished by spasm of the glottis. Epileptic attacks can certainly be produced by spasms, confined, at the commencement, to the muscles of the vessels solely; although the experiments in proof are beset with many difficulties; for the ascending cervical branches of the sympathetic operated upon do not seem to be the only sources of nervous supply to the carotids and their branches.

It might, we think, be modestly observed, in objection to these views, so learnedly discussed by Dr. Reynolds, based as they are upon the experiments of the illustrious physiologists we have named, that the very nature of the loss of consciousness consists in its suddenness, which, traceable to such a cause, can but indicate what must amount to complete occlusion occurring at the central point from which these vessels arise, in the part where the vasomotor nerves take their origin; and if not there, the arrest of circulation would take place only at such a distance as involves the necessity of admitting the establishment of collateral circulation. Nor is it amiss to point out the fact that, if the theory be correct in all its details, a very considerable support is obtained for the hypothesis of Dr. Radcliffe, that muscular action is mainly due to the abstraction of nervous force. In what then does the nature of the morbid change really depend? Clearly not of necessity in structural alteration. The interstitial processes of which nutrition consists, and upon which function depends, must be altered in quantity, or quality, or both. The disturbance, then, says Dr. Reynolds, is functional.

"It is the proper function of this portion of the nervous system to transmit impressions, both motor and sensory, and to reflect certain afferent impressions, through efferent nerves to muscles. Now, the essential elements of a convulsive paroxysm exist more or less frequently during health, and as a part of the healthy processes of the body. The unconsciousness of sleep is a normal phenomenon; the continuance of involuntary and even irresistible muscular movements is equally compatible with, and necessary, to normal life. The manner in which the former is brought about is not accurately determined, but the most

probable mode is that suggested by Dr. Laycock, viz., that the 'access of affinitive impressions is arrested;' and that this depends upon 'such changes in the medulla oblongata that the changes in the sensory nerves . . . are not propagated to the organs of thought and will.'<sup>a</sup> On the other hand, under the influence not only of the will but of emotion, sensation, and simply reflex impression, there are occurring hourly various muscular movements and changes in the superficial circulation. Respiration has its centre in the medulla oblongata; and, easy and tranquil as it is when no source of disturbance is at hand, it becomes suspirious or sobbing under emotion; yawning and irregular under fatigue; and positively arrested by fear, or by the effort required for a strong physical exertion. The teeth and hands are clenched by anger; the face is distorted by grief, flushed by excitement, suffused by shame, and blanched by fear; and thus the phenomena of convulsions, dissected out as it were, occur in our daily life as parts of our healthy activity. There is nothing to show, therefore, that the changes upon which epilepsy depends, are of necessity modifications in the kind of function exercised by the organ from which it starts. Misplaced in time, in combination, and altered in degree, those functions are; but no new property is conferred upon the organ, nor is any natural power changed in the quality of its exercise.

"If altered—but not in kind—the functions of this reflective centre must be changed in degree; and we have to ask whether there is increased or diminished action. The answer is, I think, simple enough, if—setting aside ulterior questions as to the nature and cause of muscular contraction—we inquire what is the proper action of the organ. If it is to put in motion certain trains of muscular contraction, such as those conducing to respiration, emotional expression, and the like, then that action is increased, as well as misdirected at the onset of a fit. For not only is the symmetry of feature distorted, but violent movements of the face-muscles are induced; the eyeball is carried whither no voluntary effort could effect its movement; the tongue is crunched, and the teeth are broken by the forcible champing of the jaws; the neck and head are strained to frightful extremes; the scream of the attack, and the arrest of respiration—now from one cause, such as a closed glottis, and again from another, such as fixed diaphragm and thoracic walls—are of the nature of violent exertion; and the torsion of the limbs and the vehemence of their movements are all of such kind as to demonstrate excess of action.

"In the maintenance of equilibrium, the rest which results from opposed but balanced forces, there is power as active—it may be more so,

<sup>a</sup> Mind and Brain; or, the Correlations of Consciousness and Organization. Vol. ii., p. 301.

although not so conspicuous—as in the tossing to and fro of the same forces when the balance is disturbed. But it is not all equipoise in healthy action, and one-sided action in disease. The ordinary movements of respiration are indications of unrest; the face is not actionless, when the mind and emotions are most healthy, but all its features are in play; there is not unchanging activity of brain during the whole lifetime of the healthy man, for in his waking and his sleeping hours there is the swinging to and fro of the pendulum of intellectual and moral life, now in relation with every impression from the external world, and again cut off therefrom by the mysterious barrier of sleep. In the paroxysm of epilepsy, on the other hand, at its severest moment, there is absolute balance of respiratory movement; muscles of inspiration and expiration are as it were ‘pitted against each other,’ and stand still with spasmodic energy; facial expression is lost, for it bears no relation to either mind or heart; and, again, the swinging to and fro of mental activity is arrested by an unnatural calm. In all this there is the evidence not only of disturbed equilibrium, but of distorted, misdirected, exaggerated power; and we must regard the paroxysm as the evidence of increased functional activity.”

Our readers will here clearly perceive that these are not the views of Dr. Radcliffe. That epilepsy is connected with anything like over-action of the nervous system this latter authority altogether denies. It is only fair to state that Dr. Reynolds has a distinct and special meaning of his own for the term “action.” His “action” is of complex character, and partakes of the nature of reaction; for he observes, in the reflex function there is the conversion of an impression from without into a motor impulse from within. In health there is a due proportion between these two factors; in disease it is distorted, and either one may be increased; the balance in the reflective centre is readily disturbed, and this want of permanent functional stability is a constant element. Where there is but little spasm there exists but the simple readiness of disturbance; where convulsions are strongly marked the balance is disturbed, and motor-excitability exalted in addition.

The deduction from this, it is at once seen, is that epilepsy is a sthenic malady. It is a disease produced, says our author, by over-action. Over-action is the exponent of increased functional activity, which is itself the “immediate result of augmentation in the interstitial metamorphosis of organ.” To this there is an objection—an objection that naturally flows from an observance of those conditions which we have seen by experiment, and acknowledged in practice, most readily bring about the closest simulation

of epilepsy proper. These conditions are, for example, those of anemia, of blood-poisoning, of general cachexia, or created by lesions inducing shock and prostration; and whether inducing brain disease or exhausting eccentric irritation. And, at least, it must be confessed that this theory of sthenic over-action would derive additional support from an absence of those remarkable facts which clearly show that a morbid state, precisely similar to, and almost identical with epilepsy proper, is capable of being induced under such circumstances as justify inferences altogether antagonistic.

It should be noted, that out of the cases examined by the author there were 30 persons, or 42 per cent., with regard to whom no cause of the attacks could be assigned. From the data afforded him by the remaining cases Dr. Reynolds was able to conclude that the primary change was brought about either hereditarily or by intense functional disturbance from violent external impression; or by the medulla becoming involved in some general nutrition-changes of morbid kind and degree; or changes normal in kind, but of morbid degree; or by a combination of various causative conditions; or by lesions in the reflective nervous centre; or outside that organ; the latter operating either directly or by reflex action.

True epilepsy is a rare disease in the experience of Dr. Reynolds. Out of 1,820 patients seven were examples of the idiopathic disease; and of these four were males, and three females. In private practice 81 patients were afflicted with epilepsy out of 231 cases of nervous disease. There is a remarkable fact about these statistics, that the poorer classes seem to suffer in the proportion only of 1 to 14, while the proportion among the richer is as 1 is to 3. We suspect that this difference is partly to be ascribed to the hurried nature of hospital practice; and perhaps not a little to the fact that the private patient is but too apt to conceal the real nature of his case, or at least to ascribe some reason for it which would place it out of the "idiopathic" list.

The statistics of Dr. Reynolds further show that proclivity to nervous disease from transmission existed in 31 per cent. of his patients; and he concludes that an hereditary tendency to epilepsy is much more common than is usually supposed. M. Delasiauve found evidence of hereditary taint in but nine per cent. Dr. Sieveking makes it 11 per cent. Dr. Reynolds has it as much as 16 per cent. From our author's carefully compiled tables it is also apparent that, whereas in the male sex hereditary epilepsy seems especially prone to commence at puberty—six out of seven cases appearing between

15 and 18 years of age—in the female sex there does not appear to be the same proclivity.

From the table noting the conditions which might be held to constitute the causes of the disease it would appear that mental work and emotional disturbance are more commonly operative than any other. The age at which these influences are supposed to have begun to take effect is worthy of attention. The three males who assigned mental work as the cause of their attacks were none older than 15, while the one female, who referred her epilepsy to mental and emotional causes combined, was six years of age!

One frequent cause of epilepsy—although the first attack may be deferred for many years—is, we are satisfied, blows on the head in childhood, most commonly sustained in falling off chairs, and so on. Dr. Forbes Winslow, in his work on *The Obscure Diseases of the Brain and Mind*, states that his experience has led him to assign such causes of epilepsy to be frequent, even among adults. “Repeatedly,” he observes, “I have had under my care cases of epilepsy bidding defiance to all treatment, whose origin could unquestionably be traced back—for varying periods of one, two, five, eight, ten, fifteen, and even twenty years—to damage done to the delicate structure of the brain by injuries inflicted mechanically upon the head.”

One of the most interesting points connected with the subject of epilepsy is altogether shrouded in obscurity, and this is the amount of constant relationship of the disease to the mental condition. The affection of the mind, at least, indicates this much—that in whatever the essential nature of the disease consists, some of it still persists during the intervals between successive attacks. Indeed this marked disturbance of the higher functions of the brain affords the strongest evidence of the essential seat of the disease; and the determining the laws that regulate this disturbance is at once the most difficult and interesting problem that either the psychologist or physician can propose to himself for solution. Irrespective of hereditary taint or cause, period of invasion, frequency of recurrence, severity, or duration, what is the actual mental condition of the epileptic during the intervals? In most cases there is marked mental disturbance. Esquirol states, that four-fifths of the epileptic women in the Salpêtrière were insane. In a considerable number the loss of mental power is, though not remarkable, yet sufficient to excite attention; and indeed it may be doubted whether the powers of mind of any epileptics are altogether unaffected. Dr. Reynolds

separates epileptics into four classes. Among the individuals in the first class he places those who present no apparent change in mental capacity; that is to say, we opine, who let none but themselves know of their own deficiencies in this particular.

In the second class are comprised those sufferers who present defect of memory. We quite agree with Dr. Reynolds that the real nature of this defect is constituted by defective attention.

In the third class the apprehension is defective, the loss of memory is present, as in the former class, and, in addition, these patients are dull in acquiring new ideas, and have very confused impressions of arguments and circumstances.

The fourth class includes those in whom the failure of the mental powers is more or less complete. The patient is, to all intents and purposes, an idiot.

The more developed forms of mental disturbance, though replete with the highest interest, are not such as can engage us here. The more practical question is the determining these conditions, the recognition of which will enable the physician to foresee a seizure, and whose appropriate and well-timed treatment may contribute to the cure of the sufferer.

It is a curious question, how far the exaltation of the mental faculties, which not very seldom signalizes the commencement of epilepsy, can be held to indicate the advent of that exaggerated interstitial change to which Dr. Reynolds refers. Morel, as quoted by Dr. Winslow, states, that among the young a wonderful aptitude to conceive things quickly, to examine them under their most brilliant and poetical aspects, has been exhibited by many of them. History has transmitted to us the names of several men of great genius who have been epileptics; but, as the late Dr. Burrows remarks, these individuals have been the victims of the most tyrannical passions. The full and entire preservation of the faculties of epileptics, the power of applying them in a continuous manner to the execution of designs remarkable for their grandeur and continuity are, in fact, excessively rare. M. Sandras properly points out that Cæsar, Mahomet, and Petrarch, form striking exceptions to this supposed rule.

The first change remarked in the character is said, by Morel, to be excessive irritability and erotic tendencies. Dr. Sieveking remarks, that there is scarcely an impression referrible to the nerves of common or muscular sense, or of the special senses, which does not occasionally indicate the approach of the seizure. Are these

really referred sensations, and has the aura no real eccentric origin? Dr. Winslow observes, that authors commonly state that when the aura reaches the head insensibility ensues; but that it appears mostly the fact that the termination seems to be at the throat.

Impairment of attention is, no doubt, the most common precursory sign of epilepsy; and this fact obtains, in the best works on diseases of the mind, its due share of notice. Dr. Winslow dilates upon this failure simply and graphically:—

“The patient finds that he cannot, without an obvious and painful effort, accomplish his usual mental work, read, or master the contents of a letter, newspaper, or even a page or two of a favourite book. The ideas become restive, and the mind lapses into a flighty condition, exhibiting no capacity for continuity of thought. Fully recognising his impaired and failing energies, the patient repeatedly tries to conquer the defect, and, seizing hold of a book, is resolved not to succumb to his sensations of intellectual incapacity, psychical languor, and cerebral weakness; but he often discovers (when it is too late to grapple with the mischief) that he has lost all power of healthy mental steadiness and normal concentration of thought. In his attempt to comprehend the meaning of the immediate subject under contemplation, he reads, and re-reads, with a determined resolution, and an apparently unflagging energy, certain striking passages and pages of a particular book, but without being able to grasp the simplest chain of thought, or follow successfully an elementary process of reasoning; neither is he in a condition of mind fitting him to comprehend or retain, for many consecutive seconds, the outline of an interesting story, understand a simple calculation of figures, or narrative of facts. The attempt, particularly if it be a *sustained* one, to master and converge the attention to the subject which he is trying to seize, very frequently increases the pre-existing confusion of mind, producing eventually *physical* sensations of brain, lassitude, and headache. Going through a train of close reasoning,” he goes on to say in the words of Dr. Beddoes, “is an undertaking absolutely impracticable. Indeed to dwell upon any one thought steadily is a task, and a task, too, that can only be gone through at long intervals. Some person has remarked of a former king of Prussia, that his conceptions were quick, but that on contemplating a subject he grew confused. Whether it be true in this particular instance or not, the observation holds good of many individuals predisposed to epilepsy. They are generally those who have tampered with their sensibility. They seize a question dexterously, but their strength is exhausted in the first assault. If you try to make them grapple with a difficulty they immediately flinch. To any proposition requiring them to contemplate a number of ideas stedfastly, they

will yield a flat unintelligible assent; or, to mask their want of bottom, as the jockeys term it, they will endeavour to fly off to another topic. To conceive the condition of the head in such cases more distinctly, we may recollect how it fares with the eye when weakened in such a manner, that the instant it is cast upon an inscription, the characters are perfectly plain, but that in a little time they seem to run into each other, they become undistinguishable, and at last vanish altogether. From misconduct of the understanding all frivolous people must be troubled with some flightiness of attention. We need no other reason to enable us to understand why it becomes requisite in polite circles to change the topic of conversation every second minute."

The conclusions at which Dr. Reynolds arrives on these points he thus succinctly lays down:—

- "1st. That epilepsy does not necessarily involve any mental change.
- "2nd. That considerable intellectual impairment exists in some cases; but that it is the exception, and not the rule.
- "3rd. That women suffer more frequently and more severely than men.
- "4th. That the commonest failure is loss of memory; and that this, if regarded in all degrees, is more frequent than integrity of that faculty.
- "5th. That apprehension is more often found preserved than injured.
- "6th. That ulterior mental changes are rare.
- "7th. That depression of spirits and timidity are common in the male sex, but not in the female; that excitability of temper is found in both."

Dr. Reynolds' chapter on treatment is as well and as logically written as is all the rest of his work, and that is very logically and very well indeed. He ridicules the notion of specifics, and aims at treating the epileptic condition by reducing undue excitability in the reflex centre by sedatives, counter-irritation, and the maintenance of a regimen; and by improving the mental and general health.

Of sedatives, conium, he believes, delays the attacks and diminishes their severity. Hyoseyamus, belladonna, and stramonium diminish their number according to his own experience. He seems to have had no experience of atropine, or of the valerianate of the alkaloid so vaunted by Azario, Lange, and other continental physicians. In one case an habitual series of seventeen severe attacks was reduced to three, by Indian hemp in the usual dose. *Cotyledon umbilicus* he finds altogether valueless. The effects of *assafetida*, in doses of gr. x. to gr. xxx., thrice daily, he has found similar to those of henbane.

Chloroform delays the attacks for a time, but exerts no permanently good influence.

Dr. Reynolds has not obtained that success from the employment of bromide of potassium that Sir Charles Locock is stated to have met with. It seems tolerably certain, however, that this medicine is a decided anaphrodisiac. The oxide of zinc seemed to possess most influence in those cases in which vertiginous sensations were frequently accompanied by insomnia. In common with most of those who had the satisfaction of seeing Mr. Holthouse's *castrato*, to whom the nitrate of silver had been freely administered previous to the operative compliance with his eccentric wishes, Dr. Reynolds considers the salt to be nothing less than it is popularly supposed to be—*lapis infernalis*.

We see no mention of the curare, or of the *selinum palustre*, or of *digitalis*, as recommended by Duclos; or of the *alisma plantago*, as prescribed by Hochstetter; or of the *Galium album*, so highly commended by Dr. Ogle; or indeed of any of the more recent so-called remedies. Perhaps the Doctor credits them with just as many virtues as pertain to the prescription he gives us of Leuens:—

“Take the powder of Osmond, and the root of Peony, and the powder of Moztegan, and drinke all these with stale ale, and let them say their prayers; and as soon as the party falleth downe, and give the sicke to drinke with good ale that is stale, and by God's grace he shall never have the falling evill any more:—proved.”

*Considerations Pratiques sur les Hernies Ombilicales Congénitales et leur Traitement.* Par le DOCTEUR DEBOUT.

*Practical Considerations on Congenital Umbilical Herniæ, and their Treatment.* By DR. DEBOUT. From the Bulletin Gen. de Therapeutique. 8vo, pp. 35.

IN this essay Dr. Debout gives a very complete account of a form of disease or malformation which had not hitherto attracted the degree of attention that the frequency of its occurrence or its practical importance ought to have obtained for it.

What little has been done concerning congenital umbilical hernia

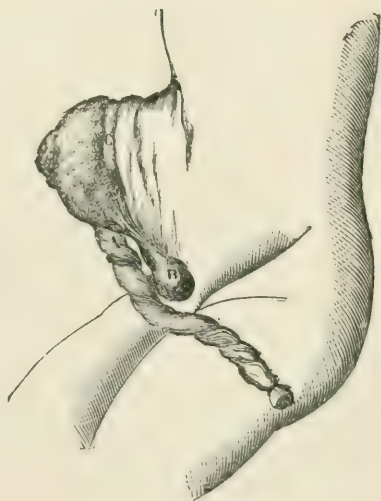
is rendered obscure by the variety of names that has been adopted by different writers. By some it has been named from the region it occupies; and we have it called *exomphalos*, *omphalocèle*, or *congenital umbilical hernia*. By others it has been named from the contents of the tumour; and so we have such terms as *hépatomphale* and *hépatocèle*; and others again, referring it to an arrest in the development of the abdominal wall, designate it under the name of *ventral hernia* or *congenital umbilical eventration*; but if we were to restrict ourselves to these titles, there are many cases that would escape us which should be included, such as many of those where the cord is ruptured during labour, an accident that may easily occur in cases of umbilical hernia, from the extreme delicacy of the membranes forming the walls of the tumour; and Dr. Debout suggests, with a view to facilitating the study of the subject, that the general title *congenital umbilical hernia* should be adopted, adding to it the denomination of the tumour as a sub-title, such as *hepatocèle*, when the liver alone fills the cavity of the hernia, or *eventration*, when the umbilical opening invades the surrounding regions.

*Congenital umbilical hernia* presents itself under the aspect of a tumour,

Fig. 1.



Fig. 2.



of more or less considerable size, occupying the region from which it draws its name—a tumour with transparent walls, through which the viscera, contained in its cavity, may be seen. In their definition of it most authors contrast the congenital hernia with that which occurs after birth, saying, that in the congenital the tumour is formed, not by viscera which have escaped from the abdomen, but by organs which have never been enclosed; but Dr. Debout thinks this observation, ingenious as it is, only applies to a small number of the cases, and he thinks the peculiar nature of their coverings the most important distinguishing feature of the congenital herniæ.

The transparent walls of a congenital hernia are formed of two distinct membranes, between which there is deposited a layer of the substance known as the *gelatine of Wharton*.<sup>a</sup> The superficial membrane is the external layer of the cord, and the internal one is a membrane completely foreign to the structure of the cord, and appears to Dr. Debout to be formed by a very thin prolongation of the peritoneum; but the remarkable phenomena of which this membrane is the seat, during the spontaneous cure of the lesion, oblige him to express himself on this point less affirmatively than the most of authors do. Diverticula belonging to serous membranes in other malformations—*spina bifida*, for example—do not comport themselves in the same manner.

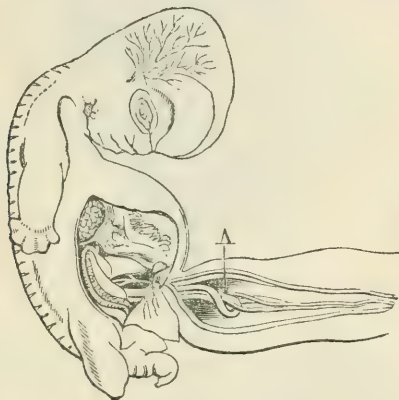
The umbilical vessels are much separated at the base of the tumour by the viscera contained in it, and their direction is not always the same; but at some point of the surface they are re-united, and proceed in their course in the undilated part of cord. The viscera contained in the hernia are, generally, a portion, more or less considerable, of the liver or of the intestines; sometimes the stomach and spleen pass into it. As often a part of the liver alone forms it, and at other times, but more rarely, the intestinal convolutions. The difference of the contents depends on the period of intra-uterine life at which the malformation occurs.

Dr. Debout recognizes two forms of congenital umbilical hernia: 1st, that occurring in the embryonic period, from an arrest of development; and 2nd, that occurring at the end of the fetal period of life. Notwithstanding that Cruveilhier denies that the abdominal viscera are, at any period of embryonic life, situated in the base of the umbilical cord, Dr. Debout maintains that the first species alluded to is actually caused by an arrest of development,

\* When the gelatine of Wharton is abundant it often forms cysts, as at B, Fig. 2.

and refers to the plates of Hunter, Wrisberg, and Velpeau, and to a preparation of an embryo in his own possession, as well as to several in the museum of Professor Coste, as proving that, at the beginning of intra-uterine life, the cord is a hollow organ, and serves as a diverticulum to the abdominal cavity; and he copies the annexed engraving from *Coste's Atlas of Embryology*, in which a coil of intestine is seen at A in the base of the cord, as exhibiting its position at this period.

Fig. 3.



In the normal state this portion of the intestine retreats into the abdomen, between the seventh and tenth weeks; but if the progress of development be in any way arrested a hernia is the result; and, in some instances, the portion of the intestine in the cord runs through all the stages of its development there, and becomes irreducible. Dr. Debout compares this to fruits which, at an early period, have been placed in bottles, and when they have come to maturity cannot be removed through the opening that had received them, and says, that in the same way the rudiment of intestine contained in the base of the cord continues to develop itself, till it has acquired such a size that it cannot be restored to the abdominal cavity. Such herniæ contain only convolutions of intestine, and these belong to the colon and the end of the small intestine, the portions of the digestive tube primitively contained in the base of the cord. Figure 4 is taken from an example of this form, communicated by Professor Moreau, but in this case the envelopes of the cord gave way at an early period, and the convolutions of the

intestine developed themselves freely in the amniotic fluid, and

Fig. 4.

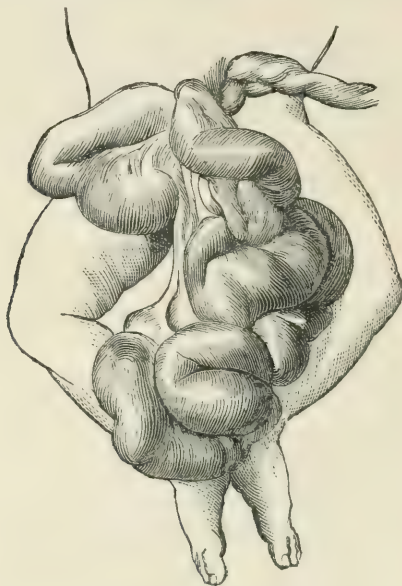
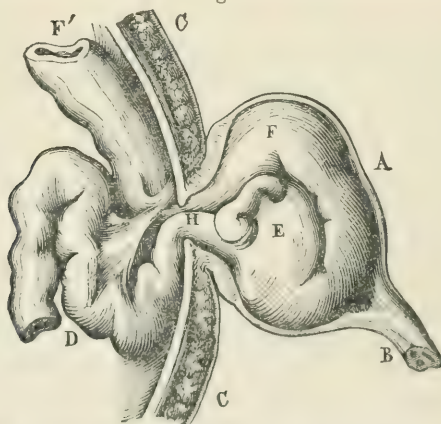


Fig. 5 is from a section made in a case that occurred in the practice

Fig. 5.

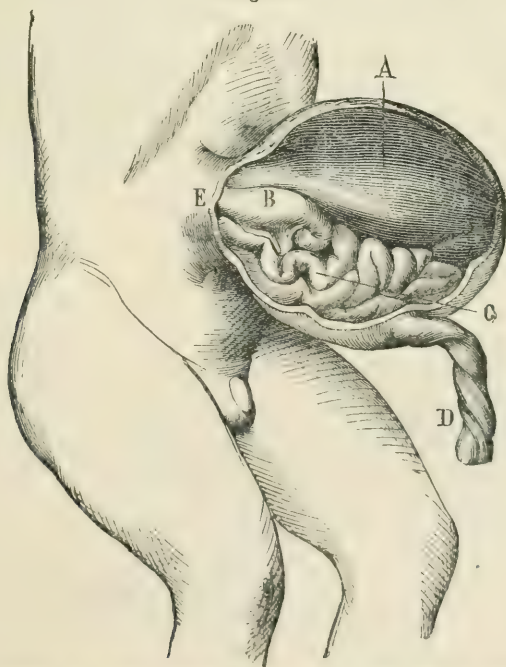


of M. Giraldès, where the portion of intestine in the hernia consisted of the cecum, E, a small portion of the ascending colon, F, and of the small intestine, being the portions of which the rudiment is seen at A, in Fig. 3. In some cases the liver passes through the opening maintained by the intestine, and may be retained in the hernia,

together with the intestine, by its relations with the umbilical vein, and sometimes it even forces the intestine back into the abdomen.

Cruveilhier believes that it is a more satisfactory theory than that of arrest of development, which attributes the hernia to the effect of some compression the fetus has been subjected to, or some vicious attitude it may have assumed, whereby the viscera have been pushed forwards; but Dr. Debout thinks the facts now recorded disprove this explanation of the majority of cases of congenital umbilical hernia, while he admits that it may be true of the cases of hernia occurring at the close of fetal life, and refers to the experiments of Scarpa, as proving that pressure from behind, against the umbilical opening, or traction on the cord, may cause a protrusion of the peritoneum, and form the commencement of a hernia—the tumour, as in the other form, passing into the base of the cord, and being covered by its membranes. Thus he recognizes two forms of congenital umbilical hernia:—1. Those due to an arrest of development, by which the portion of the digestive tube,

Fig. 6.



originally lodged in the base of the cord, does not retreat into the cavity of the abdomen. 2. Those caused by displacement of a

convolution of the intestine contained in the abdomen, and either drawn or pushed against the base of the cord by a compression or vicious attitude of the fetus. Hernia of this description, as in the case from which the illustration, Fig. 6, was taken, may sometimes contain the entire liver and a portion of intestine, and be pediculated; but such cases are of interest only to the teratologists, as there is no instance of a fetus so affected having attained its complete development; they are always expelled before the seventh month of pregnancy.

The nature of the coverings of congenital umbilical hernia renders its diagnosis very easy, if its volume be at all considerable; but when the base of the cord contains only a convolution of intestine it often passes unperceived, and the intestine is included in the ligature applied to the cord, giving rise to all the symptoms of strangulation, and to death if the intestine be completely surrounded; but if only a small part of its circumference be included in the ligature, the child may escape with a stercoraceous fistula.

Almost all the older authors think a congenital umbilical hernia incurable. Ruysch says:—“*hunc affectum sæpius a me visum ast nunquam curatum memini; omnes enim ab utero ad tumulum delati fueri, 5°, 6°, 7°, 8°, 9° die.*” And Amb. Paré relates that, having been called to operate on one of these cases, he refused “*et lui dis qu’il mourrait bien sans moi.*” The occurrence of cases of spontaneous cures has forced modern surgeons to appeal from the judgment of their predecessors, and a complete study of the subject shows that the prognosis must vary with the several forms of the tumour.

In the herniæ occurring at the end of fetal life, and which are formed by a small fold of intestine in the root of the cord, the prognosis is favourable if the hernia does not pass unperceived. The intestine is replaced, and the cord tied as usual, and the protrusion of the intestine prevented by the ligature during the closing of the opening. In the herniæ by eventration, if reducible, a spontaneous cure may occur. The external covering of the tumour, which belongs to the cord, separates where it is continuous with the skin, but generally at a later period than the cord usually falls off; then the internal membrane, which is continuous with the muscles and the peritoneum, becomes covered with granulations, and, contracting gradually on itself, reduces the viscera situated in the cavity of the tumour, and finally brings the borders of the opening into contact. For the accomplishment of this process it is

necessary that the hernia should be reducible; and, according to Dr. Debout (but, in this, our experience leads us to differ) the *hépatomphales* are the only forms of this kind of hernia in which this condition exists. In the management of these cases Dr. Debout recommends that we should limit ourselves to retarding the separation of the cord, and favouring the natural process of cure, avoiding all attempts at closing the opening, or bringing its edges into contact. The hernia, he says, should simply be covered with lint saturated with oil, to prevent evaporation, and very moderate pressure kept up by a bandage, with a view to facilitating the enlargement of the abdominal cavity. The integument around the opening is thickened, and forms as it were a cushion, and it is important to prevent its becoming inflamed, as it is by the unfolding of this and its being drawn over the aperature that the cicatrix is formed. In order to prevent its being irritated, Dr Debout recommends its being covered with a powder formed of equal parts of quinine and charcoal; and when the tumour is large, and there is much putrefaction, he adds an equal part of chloride of lime. In all cases he finishes the dressing by covering the entire abdomen with a thick layer of carded cotton. All trace of the hernia does not disappear when the cure is complete, for the fibrous tissues forming the umbilical ring have been so distended that a prominence remains which must be supported by a light bandage.

Fig. 7.

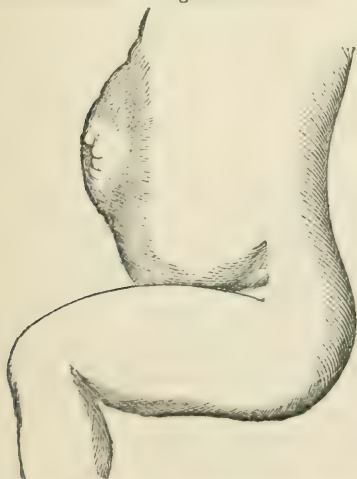
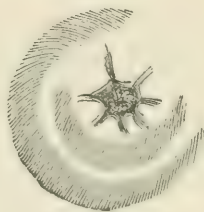


Fig. 8.



In pediculated or irreducible hernia, in which the rudimental intestine has run through all the phases of its development in the

umbilical pouch, a cure by the unaided powers of nature is impossible, for however small the mass of intestine may be, it is irreducible. The phenomena of the spontaneous cure take place, but the retraction of the peritoneal covering only results in its rupture, and the opening of the sac, followed by peritonitis, from which the child dies. Dr. Debout knows of no instance in which a cure of such a case has been effected; but as death without surgical aid is inevitable, he does not hesitate to recommend the early adoption of an operation for the reduction of the hernia. Two methods of operating present themselves—one in which the intestine is not only returned, but the edges of the opening are pared and brought together by suture; and another, in which the intestine is merely returned, and the parts allowed to undergo the process of spontaneous cure, as in cases of reducible hernia. "The chances of death being," he says, "in proportion to the extent of the wound, the practitioner ought to content himself with incising the abdominal wall, in the direction of the linea alba, and, the reduction of the hernia being effected, reuniting the wound with points of suture. The superior parts of the coverings may now be excised, and their base drawn together by a ligature; and if this do not suffice to maintain the edges of the opening in contact, recourse may be had to the use of adhesive plasters, as in the cases of Hey, Buchlotz, Hamilton, &c." In such cases we should not, he says, despair, the peritoneum is not more susceptible of inflammation in a child than in an adult, and the chances of success will be in proportion to the promptitude of the surgical intervention.

Dr. Debout concludes his most valuable monograph by detailing a number of cases, from his own practice, and various other sources, illustrative of the principles he has laid down. We regret that we cannot extract these in full, we can only make the following analysis of them, for the benefit of those of our readers who may not be induced to refer to the paper itself:—In 17 cases the hernia was reducible, and in eleven of these it was entrusted to the unaided powers of nature. In two the children died from the effects of local peritonitis, and in the others the cure was perfect, many of them having been seen in perfect health at the end of periods varying from 3 to 18 years. From one of these, case five, under the care of Professor Stolz, the illustrations here numbered 2, 7, and 8, showing the form of the tumour and the resulting cicatrix, have been taken.

In three cases recorded by Storch, Hey, and Buchlotz, the edges

of the opening were drawn together by adhesive plaster, after the hernia had been reduced, and cures ensued. In one where the tumour measured seven inches ("*mesure du Rhin*") in diameter, Bael, after having reduced the mass, surrounded the tumour with a ligature, and, after a prolonged suppuration, the child recovered. In another, Hamilton, after having reduced the hernia, applied a ligature on the base, and maintained the edges of the opening in contact by means of two silver pins and adhesive plasters, and the cure was complete in a few days.

In one case, related by Cruveilhier, the edges of the opening were pared, and united by the aid of points of suture, and a cure effected; but, Dr. Debout thinks, "in spite of the operation, rather than as its consequence."

A case of irreducible hernia, in which M. Giraldès operated in the manner recommended by Dr. Debout, is also related; but the parents would not permit the operation to be performed till after peritonitis had set in, and the child died on the fourth day.

We have to thank Dr. Debout for the opportunity of illustrating this review by electrotypes from his original blocks, and we cannot conclude without again expressing our sense of the great value of his highly practical and most important paper. By applying himself to the true source of all progress in medicine and surgery, the careful observation of the natural history of disease, and the means adopted by the system for its removal, Dr. Debout has placed on a scientific basis the treatment of congenital umbilical hernia.

*The Diseases of the Prostate, their Pathology and Treatment, comprising the Second Edition of "The Enlarged Prostate," and a Dissertation "On the Healthy and Morbid Anatomy of the Prostate Gland," to which the Jacksonian Prize, for the year 1860, was awarded by the Royal College of Surgeons of England.* By HENRY THOMPSON, F.R.C.S. London: John Churchill. 1861. 8vo, pp. 364.

A WORK, one portion of which has been so stamped with the approbation of the profession as to require a second edition, and the other portion of which is what our continental brethren would term an "*ouvrage couronné*," requires no great amount of praise at

our hands to recommend its perusal to the surgeon anxious to acquire information on the special topics of which it treats: in fact, in our opinion, the title page of the book carries with it its own review; and, were it not that we consider a few extracts from it may afford both pleasure and information to our readers, we should have been tempted to announce the appearance of the work, and the honourable circumstances under which its debut has been made, satisfied that the result, as a matter of course, will prove equally satisfactory to both author and publisher. As it is, we have culled a few passages from our author which will, we trust, give our readers a sample of his quality, and, at the same time, but whet their appetites for further information, and induce them to make themselves masters of a book from the perusal of which we ourselves have derived both pleasure and instruction.

Mr. Thompson's work is divided into two parts; the first of which is devoted to the description of the anatomy of the prostate, taking into consideration its topographical and structural anatomy, as also stating a most extensive series of facts in connexion with its weight, size, and morbid conditions. The second part follows as a sequel to the first, and treats of the diseases to which the prostate is subject; including, principally, acute and chronic inflammations and abscesses, hypertrophy of the prostate; with an exhaustive discussion of its anatomical characters, causes, symptoms, diagnosis, treatment, and effects, as regards the functions of micturition, prostatic concretions, and calculi; the relation between hypertrophied prostate and calculus, &c., &c.

If there be one idea more cherished than another in connexion with the anatomy of the prostate, if the existence of one division of the prostate be accepted as a more orthodox article of belief in the student's anatomical catechism, and indeed in the practitioner's also, than another, it is the middle lobe of the prostate gland. Since the days of Sir Everard Home its position has been laid down for us on our anatomical charts; it is the rock on which our efforts to relieve the distended bladder in retention of urine, dependent on enlarged prostate, have been so frequently endangered or wrecked; in life and in death its existence has been equally admitted; in disease, and in pathological specimens has its presence been insisted on; and yet, what does Mr. Thompson tell us:—

“ II. THE ‘THIRD’ OR ‘MIDDLE’ LOBE.—Lying between the posterior borders of the lateral lobes is a stratum of tissue uniting them throughout

their length. As it approaches the base, this stratum becomes thicker, and sometimes has a rounded form, as if it were a distinct isolated and independent formation, perforated about the middle by the ejaculatory ducts. It is that moiety of the stratum which lies nearer the apex to which has been applied the term 'isthmus,' or 'posterior commissure,' while the thicker part, situated at the base, has received the appellation of 'third or middle lobe,' and its existence as an independent lobe is regarded by most authorities in this country as a fact in normal anatomy. This, however, I am compelled to call in question, and shall give the reasons for doing so in detail. The idea appears to have originated with Sir Everard Home, who accorded to the part in question the title of 'third' or 'middle lobe,' after five examinations of the organ by dissection, performed by Sir Benjamin—then Mr.—Brodie, and he announced the result as the discovery of 'a middle lobe,' to the Royal Society, Feb. 20, 1806; the inquiry having been first instituted, to use the words of his paper, only two months before. 'Previous to this investigation,' says Sir E. Home, 'it was not known to me that any distinct portion of the prostate gland was situated between the vasa deferentia and the bladder. These ducts were considered to pass in the sulcus between the two posterior portions, in close contact with the body of the gland.' Notwithstanding this remark, the vasa deferentia had been described as perforating the posterior portion of the prostate, by several of the anatomical authorities of the time, as E. Home afterwards learned, a fact admitted in his first volume on '*Diseases of the Prostate*,' published five years subsequently, viz., in 1811. Respecting the five dissections spoken of, the author says, 'the appearance was not exactly the same in any two of them,' The first preparation appears to have been from the person of an elderly patient, 'who had died in consequence of this part *being diseased* : the nipple-like process was very prominent.' In the next, 'there was *no apparent glandular substance*' at all in the spot indicated. All that is said of the third is, that 'there was a lobe blended laterally with the sides of the prostate gland;' but that there was really no distinct portion marked off as a lobe is clear, from the importance attached to such a formation being detected in the two subsequent cases. The most distinct appearance was found in two subjects of 24 and 25 years of age respectively; and upon the condition of the organs in these (and not in five) his account seems to have been based, and from these two cases the existence of a law was thus hastily deduced. Whatever may have been their condition (and it must be admitted that, at all events, no change similar to that of senile enlargement was likely to have been present in either), the existence of a distinctly marked portion of a spheroidal form, situate between the ejaculatory ducts and the verumontanum, at the inner meatus of the urethra, is so rare an occurrence as to mark an unusual state, whether congenital or acquired. Had the researches extended to a large number of bodies, it is certain that

these cases must have appeared to be exceptional, as my own inquiries have proved such to be. Any appearance of a lobe in this situation must be regarded as belonging, not to Normal, but to Morbid Anatomy, a slight development of it being usually attended with some signs of obstruction to the function of micturition. And so far from being overlooked, it is in this manner that it has been regarded, after very careful examination, by the earliest labourers in Pathological Anatomy who have left to us the records of their observations. Thus Morgagni, in that vast collection of cases which forms his work, '*De Sedibus et causis Morborum*,' refers to it in several places as to a morbid growth causing retention of urine; in one of which he describes it, from his own dissection, in the following remarkably precise terms:—'A roundish protuberance, of the bigness of a small grape, covered over with the internal coat of the bladder. What this protuberance was I readily supposed: and by forcing the knife into it, I cut through this and the contiguous prostate gland at the same time, length-ways, and showed that it was of the same nature with the gland; that it was very evidently continuous from it, and that there was no doubt but, if it had grown out to a greater degree, it must have been a very considerable impediment to the discharge of urine.' In another case he describes the same appearance, pronouncing it 'beyond a doubt an excrescence of the prostate gland.' He quotes several similar cases from Valsalva, Thomas Bartholin of Padua, and Valisneri, who indeed speaks of an enlargement, 'as it were, a kind of lobe, from the glandular substance' (of the prostate) 'which rose up within the bladder, of the shape and size of a walnut, and not on the anterior part, but on that which lies adjacent to the *intestinum rectum*.' He enumerates others, mostly from the '*Sepulchretum*' of Bonetus, besides alluding prospectively to another case which subsequently appeared in the succeeding letter of his own work; and then makes the following generalizations from the whole.

" 'If you attentively examine those examples which I have pointed out,' . . . 'you will observe that they were all from old men; and in like manner, if you examine all my observations, in which there was the beginning of an excrescence, you will find that this was found to grow out in the very middle of the internal and upper circumference of the gland, posteriorly; but whether all these things happened by chance, or otherwise, future observations will show.'

"Some considerable time after this, that future was realized; Morgagni returned to the investigation of this subject, and the cause of his doing so is of great interest in relation to the present inquiry. It appears that 'a celebrated anatomist' of the time (Morgagni refers, without doubt, to Lientaud, although he omits all mention of his name, as he states to be his invariable custom when he proves a contemporary to be in error) declared that an eminence at the neck of the bladder was not a morbid growth, but a small part quite natural, and common to all bodies, calling

it the 'uvula vesicæ.' Morgagni therefore devotes a great part of the sixty-sixth and the whole of the seventieth letters to the refutation of this view. In the former, stating that, during forty-four years as anatomical professor, he had most carefully dissected, at Padua, sixty or seventy bodies, and found it only in four; that he had made vivisection of a dog for the express purpose of seeking it there, but in vain, and that he had decided that it could be nothing but 'a morbid excrescence of the prostate gland appearing in old men,' . . . 'not rare, but not so frequent.' That Valsalva, Pohlius, and his friend Santorini, regarded it in the same light, the latter presenting it in a drawing as a body 'prominent in diseased bladders,' besides referring to it as 'a circumstance which is diseased and unfrequent, and does not deserve to be exhibited as perpetual and constant, to the great detriment and misleading of younger practitioners.' The seventieth letter Morgagni devotes to the purpose of giving the result of his forty-fifth year of teaching anatomy, in relation to this very subject, stating that he had dissected, in public, five subjects, and in none of them, although he had sought most carefully, was there any trace of this 'roundish protuberance,' or 'uvula.'

"John Hunter similarly regarded it, after independent examinations of the organ, stating that 'a small portion of it (the prostate) which lies behind the very beginning of the urethra, swells forward like a point, as it were, into the bladder, acting like a valve to the mouth of the urethra.'

"It seems remarkable, considering the very slight grounds upon which the existence of a distinct third lobe as a normal and ordinary constituent of the prostate, was affirmed by Sir Everard Home, that it should have been so generally received without question by English anatomists to the present day. Its existence is denied by most French observers. Cruveilhier expresses the general opinion when he says that the ejaculatory ducts, being received into a groove or channel in the substance of the prostate, a portion of variable size is indicated by them, but that it has no title to be called a lobe. It is not, he says, an isolated piece, and should be called 'the median portion.'

"The following is the result I have obtained after carefully prosecuting numerous dissections of this part.

"First.—I cannot find in healthy bodies, below 50 years of age, any formation in the situation described, capable of being recognised as a distinct 'third' or 'middle' lobe, and am compelled to conclude that any marked prominence there, which appears to possess independent characters (as regards size or form), must be considered abnormal or morbid.

"Secondly.—There is unquestionably a thick uniting stratum of tissue between the lateral lobes, which is sometimes slightly thicker in the middle line, at the vesical or basic end, than at its borders, where it becomes blended with those lobes. It is at this thickest part, three or

four lines below its urethral aspect, that there exists a perforation for the entry of the ejaculatory ducts. But in many cases this thickening in the median line does not exist; and it is to be remembered that the part in question immediately underlies the uvula, which is not a portion of the prostate, but a prominence caused by crossing interlacement of muscular fibres from the inner coat of the bladder, and sometimes prone to be unduly developed. If this fact is not borne in mind, a confounding of the two structures may arise, and the error of regarding them as one will lead the observer to attribute, inaccurately, a middle lobe to the prostate; and I think it has not unfrequently happened that the existence of a distinct middle lobe has been affirmed after simple inspection of the interior of the bladder, without further examination, which alone can determine, in all cases, whether a small projection at the neck is due to hypertrophy of the tissues of the uvula, or of the prostate, or to a small tumour embedded in the organ at this point.

“But, thirdly.—The posterior commissural part in question does possess a specific character, which distinguishes it from other parts—a character which appears to have been less prominently regarded, perhaps, than it has deserved to be, in the discussion of its title to the name of third lobe, and which appears to entitle it to some distinguishing appellation. Moreover, this character seems to be connected with that tendency to enlarge, which this part of the organ undoubtedly possesses, and which will be fully discussed hereafter. It is this, that the portion in question certainly contains a larger proportion of glandular structure than most parts of the entire organ. Thin slices from this portion, placed under the microscope and compared with slices from other parts, demonstrate this very clearly.

“Considering, then, all the terms which have been proposed to designate the part in question, there does not appear to be sufficient ground for continuing the term ‘lobe.’ On the contrary, it appears desirable to adopt that which the French anatomists have employed, viz., ‘the median portion,’ since it is sufficiently accurate; and it is perhaps not wise, without ample justification, to alter a term already used in that modern language, which, in scientific literature, is perhaps, at the present day, the most widely understood. If, retaining the terms ‘lateral lobes’ as universally accepted, we apply to the part anterior to the urethra (standing position of the body) the term ‘anterior commissure’—a part which is about one inch in length; and the term ‘posterior commissure’ to that which corresponds to it for the same length behind the urethra, it leaves that thicker portion of the organ which lies behind the verumontanum, which is penetrated by the ejaculatory ducts, which is largely perforated by glandular structures, and which is prone to great increase of size in age, to be designated by the term, ‘median portion,’ conformably to the practice already pointed out. This part, it may be added, it

has been proposed by Mercier of Paris to call the 'portion susmontanale,' as indicating its position behind the verumontanum. The above reasons for adopting the simple and hitherto better-known term of 'median portion,' apply, perhaps, equally to this proposal also, although there is no other objection to its adoption by any who prefer it, as it indicates pretty clearly the part intended by the writer."

We have to apologize to our readers for the introduction of so long an extract, but when an error is asserted as existing in our received anatomical views, we are bound to give the grounds on which the assertion is based; to such of our readers as are familiar with the opinions of continental anatomists this view of the anatomy of the prostate will not seem as *heretical* as otherwise it may appear.

Passing from the anatomy of the prostate, we shall select, for our readers' perusal, some of our author's observations on the diseases to which it is subject—and first, of hypertrophy. In enlargement of the prostate, this so-called middle lobe is generally indicated by surgeons and pathologists as the principal seat of disease, as a result of most careful investigation of the subject (with the details of which, however, we shall not load our pages, though given most fully in the work under review). Mr. Thompson gives us the following summary:—

"The general inferences which must be drawn from all the facts adduced are—

"(α) That the lateral lobes and the median portion, or middle lobe, are equally liable, or nearly so, to be affected with hypertrophy.

"(β) That the posterior commissure is generally involved with the preceding enlargements, and in proportion to the extent which they manifest.

"(γ) That the anterior commissure is not frequently affected, but nevertheless is so in rare instances.

"(δ) Lastly, that development takes place at about an equal rate in each of the three principal divisions; in some cases the lateral lobes appearing to enlarge more rapidly than the median portion; in others the contrary effect is found, and perhaps in a rather larger number of cases than in the preceding."

As to the causes that predisposes to enlargement of the prostate, Mr. Thompson gives us a candid admission, to which we also are coerced to subscribe; and we agree with him, that such a confession of ignorance is far more likely to advance the cause of scientific

surgery than conjectures, however plausible, that after all have no substantial foundation. He writes:—

“It appears to me, however, that in order to accept the etiological views of this affection which are at present current, a good deal must be taken for granted; and that if we require a fair amount of evidence before we admit into the category of causes the circumstances and conditions usually recognised, we shall probably reject them all, or very nearly so. However discouraging to the practitioner such a result may at first sight appear—however unsatisfactory such a confession of ignorance may be deemed by the student—we may rely upon it, that, if it be a true one, it is the necessary and important preliminary step to a better state of knowledge on this subject. The admission of a single circumstance into the list of causes which cannot be sustained there by something better than a fanciful belief, conventional custom, or by, it may be, the ‘impression’ or the ‘conviction’ of an author, unsupported by testimony, must assuredly become a stumbling-block in our progress towards truth. Better were it to sacrifice the apparent completeness which often seems to be thought essential to a pathological treatise, if it can only be obtained by collecting all the suggestions and speculations that have ever been associated with the subject in the literature of the past; and rather to exercise—however much the literary character of the work may appear to suffer—a vigilance, lest we admit too much, than an anxiety to press into our service every line resembling a contribution, under the semblance of information on the subject. Nothing would be easier, on such a principle, than to swell this chapter into a volume, and for the simple reason that so little is known of its subject, so much conjectured.”

Notwithstanding this open confession, Mr. Thompson submits, for our perusal and consideration, the opinions propounded on this point by our ablest writers, such as Hunter, Wilson, Bell, Cooper, Brodie, Coulson, Desault, Mercier, Civiale, &c., &c.

That portion of his work, however, which is “therapeutical” in its character, doubtless will command the largest share of the practising surgeon’s attention. Theoretical and anatomical questions, of necessity, will attract the consideration of those specially engaged in such pursuits, but the hard-working practitioner too seldom has time to devote to the solution of such knotty points; not so with anything that bears on a remedial nature. These must command his serious attention, and ably will he find them handled in Mr. Thompson’s masterly treatise. Although we fear that we have exceeded our usual limits for quotation, we shall submit, for our readers’ perusal, this one passage, in which a remedy, easily

procurable, is mentioned, the use of which may appear novel to many:—

“An infusion of the underground stem of the *Triticum Repens* (dog's grass, or couch grass) is an agent from which I have derived much advantage. For 12 months I have used it largely, both in private and in hospital practice, in numerous cases of constant and severe irritation of the bladder from any cause; and in a certain proportion it has been of great value. It has long been prized in these circumstances in some country districts; and it is officinal as a diuretic, and as a ‘diet drink’ among the French. My first knowledge of it was derived from a country patient suffering from severe stricture, and the frequent and painful micturition of which he was the subject was obviously more effectually subdued by this remedy, which he had long taken for the purpose, than by any medicinal means I could devise. Accordingly, I have tested its powers as above stated; and my belief is, that it is of more value in the cases described, and in those of renal calculus especially, than in prostatic irritation. Nevertheless, in these cases also, where the indications are to lessen the frequency and the pain of micturition, it is unquestionably useful; often affording relief when buchu, pareira, uva ursi, and other infusions, have failed. The mode of administering it, which I have adopted, is the following. One ounce of the dried underground stem, popularly called root, is infused in a pint of boiling water for an hour, the liquid is strained off and taken when cool; from half a pint to a pint to be taken in 24 hours. It may be used as a vehicle for many other agents, but I have almost invariably given it alone, with the view of ascertaining its effects. It is somewhat diuretic, and perhaps slightly aperient.”

1.—*Come oggi le Affezioni Scrofolotubercolari siansi fatte piu comuni, Considerazioni Storiche e Mediche.* Di A. CORRADI, Prof. di Patologia nella R. Università di Modena.

*On the Modern Increase of Scrofulo-Tubercular Disease, considered both Medically and Historically.* By A. CORRADI, Prof. of Pathology in the Royal University of Modena. Pp. 75. Quarto. Bologna: Gamberini & Parmeggiani.

2.—*In che modo le Diatesi o Disposizioni Morbose nei Popoli si mutino, e come entrino nella formazione dei sistemi Medici Dissertazione.* Del Prof. ALFONSO CORRADI.

*In what Manner Morbific Tendencies or Diathesis Change, and how they enter into the Formation of Medical Systems.* A Dissertation of Prof. A. CORRADI. Pp. 43. Quarto. Bologna: *ut supra*.

PROFESSOR CORRADI is already favourably known in this country through the pages of our Journal. Two years ago we reviewed an excellent memoir of his, on the decrease of gout in modern times. We then had much pleasure in making his acquaintance, and we are very glad to have the opportunity of renewing it now. We would, however, before commencing our analysis of the two memoirs, the titles of which are placed at the head of this review, express, as warmly as possible, our utter condemnation of all pamphlets in *quarto*. It is bad enough to have to deal with a volume of such a surface when it is a couple of inches thick, but a *quarto pamphlet* is worse and worse—it is a perfect typographical nuisance. Whilst, two years ago, Prof. Corradi was affording us abundant historical evidence of the diminution of gout in modern times, as compared to its prevalence in the middle ages, he now endeavours to prove that scrofulo-tubercular diseases have, on the other hand, increased; and as, in the first instance, he concluded that the decrease of the gouty diathesis was mainly due to the spreading of civilization, and consequent increase of agriculture, by which a cereal form of diet superseded the more highly azotized food which previously had been supplied by the countless herds of deer and swine that, in the middle ages, swarmed through the trackless forests then covering the greater part of Europe, and of which we still have interesting specimens in some parts of Bohemia and Transylvania; so, likewise, he believes that now a preponderance of a vegetable food over an animal, as is the case everywhere for the popular masses in civilized Europe, is the cause of the present increase of scrofulo-tubercular affections. If we were in possession of carefully constructed tables giving us the numbers of the population of even one country in Europe—France, for instance—together with registries of the annual deaths, and their causes, for the last 500 years, it would be comparatively an easy matter to ascertain whether tuberculosis has diminished or increased within that cycle of time. But such do not exist; the most reliable, and at the same time the longest, series of records of deaths, and their causes, are contained, we believe, in our own registries (we mean English); but we doubt that they extend over much more than 250 years. Prof. Corradi has, however, amply availed himself

of their valuable aid, so far as they could shed any light upon the subject; but, of the times antecedent to them, he has derived his information mainly from the remarks of the medical writers of the middle ages. At the present time, throughout civilized Europe, more than one-fourth of the deaths is attributable to tuberculosis in some shape; and in England alone, the Professor makes the calculation that one individual dies every 10 minutes of some one form of that disease. He calculates that out of 100,000 inhabitants there die annually, of phthisis alone, 323 in London; 382 in Paris; 296 in Berlin; 291 in Turin; 357 in Philadelphia; and, at page 12, he quotes from Heberden, that during the last century the deaths from phthisis in London regularly increased from 300, at the commencement of the century, to 400 towards the middle, up to 500 at the end of it, out of the same general mortality. This opinion he further corroborates by some statistics obtained from Woolcombe, who wrote in 1808. More ancient information upon this subject he derives from earlier writers, beginning with Rangone, of Ravenna, Prof. in the University of Padua, and who, writing in about 1558, makes no mention of phthisis among the numerous diseases to which the Venetians were subject. Baccio, physician to Pope Sixtus V., writing of the diseases prevalent in his day, mentions scabies, impetigo, lepra, and podagra, but not one word about anything resembling phthisis. But as we approach our own times, tuberculosis comes upon the scene, and in such a manner as to make it evident that it was not an accustomed enemy. The edicts of Cardinal Carafa, 1783, tell us that, 80 years before, phthisis *was extremely rare in the provinces of Ferrara*; but we infer that it had very much increased by that time, and that the idea that it was *contagious* was firmly established in those days, for we read in one edict the following words:—"Even the remote risk of the death of one man deserves the most jealous and anxious cares of those who govern;" and here follow directions for the purification and disinfection of the houses and furniture of those who died of phthisis. Having thus satisfied himself that phthisis has decidedly increased in modern days, the learned Professor passes on to consider the several causes which may have brought about such an increase. He honourably acquits vaccine from having had any participation in it, and he cannot think that climate has much to say to it, as he finds that it prevails in most countries. "Phthisis reigns equally at Naples, Vienna, Paris, London and St. Petersburg; while, in the country parts of those same nations, it is

much less common." He also exonerates syphilis from having in any way originated tuberculosis, in opposition to Alibert, Petit, and others who held that opinion. "Were our ancestors so pure a race?" says the Professor. "I shall not speak of the Greeks and Romans, who offered up incense to prostitution, but I shall look to more modern times; was not depravity at its height in the sixteenth century, and when did prostitution carry its head higher? Even the sacred places were invaded. 'In hac etiam urbe (Roma), meretrices ut matronæ, incedunt per urbem seu mula vehuntur: quas assectantur de media die nobiles familiares Cardinalium clericique.' Giacomo Vitriaco, writing about Paris, in 1560, says: 'Simplicem fornicationem nullum peccatum (the Parisians) reputabant. Meretrices publicæ ubique per vicos et plateas civitatis passim ad lupanaria sua clericos transeuntes quasi per violentiam pertrahebant. Quod si forte ingredi recusarent, confestim eos sodomitas post ipsos conclamantes dicebant. Illud enim fœdum et abominabile vitium adeo civitatem, quasi lepra incurabilis et venenum insanabile, occupaverat, quod honorificum reputabant, si quis publice teneret unam vel plures concubinas. In una autem et eadem domo scholæ erant superius prostibula inferius.' Syphilis was well known in those days; many Physicians reaped abundant harvests by treating it. Steitz wrote a treatise on it, and dedicated it to a lady abbess; while a Dignitary of the Church, Bishop Torella, published in Rome a treatise upon the same. 'Tract. cum consiliis contra Pudendam seu morbum gallicum. Romæ, 9to, 1497.'"

Syphilis, then, did not originate tuberculosis; neither did vitiated and impure air, though Baudeloque considered it one of the principal sources of this disease. What, then, is the cause? —the change of diet. "We require by nature azotized aliments," . . . "and we find that where tuberculosis is rare, animal food is abundant." From considering the invasion of tuberculosis as due to the change of diet, we naturally pass to the analysis of the second memoir on our list, upon the change of diathesis, and their influence on the treatment of disease. Prof. Corradi does not attribute those changes to atmospheric influence, but refers them to the same causes which have supplanted gout, and introduced scrophulosis. Our change of diet from a highly azotized food to a food containing little or no nitrogen, such as the potato, Indian corn, or rice, has produced, more or less, a leuco-phlegmatic tendency, to which is to be attributed, according to him, the non-

toleration of venesection in these times; and he facetiously remarks that if at present a new monastic order were to be formed, it would be superfluous to enter in its regulations any directions for the periodical bleeding of the monks, as used to be the case in many orders, as, for instance, the White Monks of Padua, who had to be bled regularly five times a year to keep their passions in subjection.

Both memoirs are full of interest and erudition, and show a vast amount of reading and research.

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1.—*The Health of the Royal Navy, considered in a Letter addressed to the Right Hon. Sir John Pakington, G.C.B., M.P.* By GAVIN MILROY, M.D., F.R.C.P., &c. London: Robert Hardwick. Pamphlet, pp. 69.

2.—*Public Health in Relation to Air and Water.* By W. T. GAIRDNER, M.D., F.R.C.P., Edinburgh, &c., &c. Edinburgh: Edmonston and Douglas. Fcap. 8vo, pp. 360.

WITHIN the last 20 years the consideration of the best means of preserving the public health has necessarily become a part, though it is to be regretted a small part only, of the education of medical men. The laws which regulate health have been studied carefully, and the results of that study, and of experience, have not only been laid before the members of the profession, but have also been impressed upon the public mind, so that sanitary matters may now be said to have been reduced almost to a science, and are generally understood by the educated portion of society. It is a cause of regret, however, that this vital subject, though its great truths are almost universally received, has not yet commanded that attention, especially from the authorities and from ruling bodies and corporations, which its importance demands.

It is true that in some places, and under certain coercing circumstances, the heads of departments and bodies corporate have listened to the advice, in some cases, the remonstrances, of medical men, have stepped aside from the hackneyed usages or abuses of routine, and have adopted the salutary principles of preventive medicine; and, in every instance where they have so done, the benefits that have accrued to the locality, and to those who were exposed to the noxious influences, have been apparent and decided, so manifest

and unquestionable indeed, that the most stolid and indifferent had to admit the utility of the measures. Now, with such examples before them, and these have been very numerous and duly recorded, one would imagine that men in authority would have been only too glad of opportunities to adopt known means to preserve health and life; we fear, however, that an examination of the vital statistics of cities and towns throughout the United Kingdom, and of the public services, would show a strange and culpable neglect of sanitary laws. This is the more extraordinary when we remember that it is not the expenditure of life alone which is in question, but what, alas! seems of more value in the eyes of the worldly man—the lavish waste of money; for it has been demonstrated, over and over again, by sanitary reformers—that in every life sacrificed, through neglect of the laws of public health, there is, independent of the value of life to the individual, which no one can reckon, a direct and estimable loss to the community of a certain amount of its wealth. There is, in fact, for every life so wasted an immediate monetary loss in some way or other, and, in a large proportion of cases, an accumulative expenditure also. Hence it is the more surprising that the subject of public health has not obtained more attention from those who have the means and the power of testing it fully, and of putting its ascertained principles in active operation. However, like every other question of the kind which is based upon truth, though its principles may be slowly acknowledged and obeyed, its doctrines will finally prevail, and men in authority will, as a matter of course, and for their own protection, if not from the higher promptings of humanity, regard sanitary science as of the first importance, and assign it a prominent place among their official regulations: then may man reasonably expect to live to old age, and the public services—the army and navy—shall no longer be sacrificed on the altar of official stupidity and neglect—shall no more be decimated, as they now are, by preventible disease.

The preceding observations are introductory to a brief notice of the two publications, the titles of which stand at the head of this paper. We have carefully looked into both of them, and are decidedly of opinion that they are calculated to effect much good. The letter of Dr. Milroy, a gentleman well known to the profession and the public as an able sanitary reformer, is worthy of all praise, directed as it is to the improvement of a branch of the public service which claims our liveliest sympathies; and being addressed to a distinguished statesman, who, when at the head of the

Admiralty, showed not only an intimate knowledge of the requirements of our naval officers and seamen, but also, by his active interference, effected many important improvements, it is likely to stir up the existing authorities and heads of departments in the navy to pursue the wise course adopted by Sir John Pakington when first Lord of the Admiralty.

Dr. Gavin Milroy, in his able and philanthropic letter, concisely and clearly points out the prevailing causes that materially affect the health and lives of our seamen in the royal service, and, by consequence, in the mercantile marine also, and he likewise shows the steps that should be taken to avert the existing evils! A perusal of his interesting letter exhibits at once the existence of these evils, their magnitude and fatal consequences, while it likewise points out the remedies. In fact, his letter is a fine practical lecture to the officers of the naval service, but more especially to the executive. The medical officers, we presume, do not require much instruction in the matter, nor do they require to be urged to carry out any measures likely to conduce to the improvement of the health of ships' crews; but they *do* require the countenance of the superior officers, the admirals and captains, and the hearty co-operation of the other representatives of the executive corps; and all this they would readily obtain if the Admiralty were to listen to proper advice, and then, in accordance with that, were to issue and enforce the due observance of comprehensive sanitary regulations. To the Admiralty, then, the country and the naval service must look for action in this most important matter; that Board which has usually had the character of being obstructive in its operations whenever medical questions have arisen, must turn over a new leaf, and learn salutary lessons from the statistics of the health of the navy which are annually laid before them. But if, in the arrogance of office and the stupidity of routine, they will not listen to these quiet monitors they must be made to hear the voice of the nation, they must be brought to their senses through the medium of the Legislature, and we know no better text for an aspiring member of the House of Commons than the sanitary evils that exist in ships of war, and the lukewarm conduct of the Board of Admiralty. But we trust that the Admiralty will, of their own accord, direct special attention to the subject of Dr. Milroy's letter, and see that every effort shall be used to protect the health and lives of the hardy and gallant seamen who man our royal fleets and mercantile navy. We trust that each member of the Board has a copy of this letter, and that

its perusal will stir up in his bosom the same feelings of sorrow that it has awakened in our breast, and a like warm sympathy for the noble fellows who are embarked in the service of their country.

The work of Dr. Gairdner is, as might be expected, replete with information, and well calculated to afford the public salutary advice. It consists of seven comprehensive lectures, with copious notes, which illustrate, in a highly popular style, several of the most important points of sanitary science.

This course of lectures was delivered by Dr. Gairdner to his medical class; and in his introductory discourse he states that he had a "two-fold object" in view. "*First*, and chiefly, to convey some of the elementary principles of modern sanitary science to those to whom I have taught the art of healing; to complete, as I think it ought to be completed, the cycle of sciences, on which that art of healing rests.

"*Secondly*, to establish, if I can, a cordial understanding between the medical profession and the public in this matter of public health; to claim for the noble, open-minded, and generous profession, to which I am proud to belong, the rightful influence that springs from its natural position in relation to sanitary matters; an influence which I am sure will always be accorded to it, whenever the true conditions of public health are rightly understood." To advance in some degree both of these objects, without sacrificing the one to the other; or rather, let me say, to advance them by calling each of them in its turn to aid the other, is what I have set forth, to my own mind, as the thing to be done."

A careful perusal of Dr. Gairdner's able lectures will convince the reader that the learned author has fulfilled his task in a most worthy manner; he has thrown together, in a lucid style, some of the most important facts in regard to public health; and so clear and convincing are his illustrations and arguments, that we are satisfied that the lecturer on sanitary science could not find a better text-book for his guidance. It is much to be regretted that teachers of the healing art, especially those who lecture on the practice of medicine, do not devote more time than they usually do to the inculcation of hygienic principles upon the minds of their students; for although, as we stated at the outset of this notice, medical education in the present day embraces a knowledge of preventive medicine, still there is much of a most important character, in connexion with vital statistics, that is left entirely unnoticed. Dr. Gairdner, therefore, as a teacher of medicine, has

not only set an excellent example to his fellow professors, but has also furnished a very complete guide to those of them who will follow in his footsteps. But his lectures are calculated to do much more, they are well adapted to create inquiry in the public mind, and to give a fresh impulse to the study of a subject that has probably fallen not a little into neglect, now that cholera and epidemic fever have not, for a lengthened period, made their dread visitation amongst us.

We trust, however, that Dr. Gairdner's book will have the effect of once more awakening public attention, and directing it to a subject that should never be put in abeyance; for if there be any purely secular question that demands our inquiry before all others it is surely that which refers to life, and the enjoyment of life and health, the preservation of both being consequent, in a great measure, on the removal of preventible disease.

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*A Handbook of Volumetrical Analysis.* By ROBERT H. SCOTT, M.A., T.C.D. London: Longmans. 1862. Cr. 8vo, pp. 107.

It would be impossible to over-estimate the importance of this department of chemical science, which has grown up almost altogether within the last ten years. That it is held in high estimation by the most distinguished chemists of the day is sufficiently proved by the fact that they have dedicated their time and talents to its development. Of these, we may particularly mention Bunsen, Liebig, Mohr, Pelouze, and Margueritte. By this method of analysis we are enabled, in a few minutes, to obtain results which would require as many hours according to the ordinary method by weight. Notwithstanding the rapidity with which these analyses can be executed, they yield nothing in point of accuracy to those performed by the aid of the balance. The determinations of iron by permanganate of potash, of iodine by arsenious acid, of bleaching powder by arsenious acid and iodine, and of silver by chlorine, leave nothing to be desired on the score of accuracy. Mr. Scott has, therefore, conferred an inestimable boon on the chemists of this country by presenting them with the present admirable work, which is the only monograph on the subject in the English language.

Mr. Scott has exhibited in this work very considerable talent for scientific composition. The style is, throughout, remarkably clear, and the arrangement simple and scientific. The student will find his comprehension of the subject greatly facilitated by numerous well-executed woodcuts. The value of this work is, in our opinion, greatly enhanced by the fact that its pages are not encumbered with descriptions of untrustworthy analyses, but are confined altogether to those of undoubted merit.

Mr. Scott divides all volumetrical analyses into three subdivisions, according to the chemical effect upon which they are based:—

- 1st. Saturation analyses.
- 2nd. Oxidation and reduction analyses.
- 3rd. Precipitation analyses.

Under the first division come the determinations of acids and alkalis. These are based on the chemical fact that an equivalent of any acid exactly neutralizes or saturates an equivalent of any alkali; and conversely, that an equivalent of any alkali exactly saturates an equivalent of any acid. Thus, we know, before having recourse to experiment, that 63 grains, or one equivalent of oxalic acid (63 being the equivalent number of this acid considered as monobasic  $C_2O_3, 3HO$ ) will exactly neutralize 40 grains, or one equivalent of hydrate of soda ( $NaO, HO$ ), and 56 grains, or one equivalent of hydrate of potash ( $KO, HO$ ), &c. To enable us to estimate the value of alkalies, we have, therefore, only to prepare a dilute acid of known strength, which is usually called a test-liquor. The acids commonly used are sulphuric and oxalic; of these the latter is, in our opinion, more convenient. Mr. Scott, however, gives the preference to the former. The preparation of a test-liquor of this acid is exceedingly easy. We have only to dissolve a known weight of it in a known volume of water. The acid must, however, be rendered perfectly pure by repeated crystallizations. In order to determine the value of an alkali, say a solution of soda, by means of this test-liquor, we introduce it into an accurately graduated tube, or burette, as it is usually called, and add it, drop by drop, to the weighed soda solution, previously coloured blue by a small quantity of an infusion of litmus. The moment the point of saturation is reached, a single drop of acid from the burette will change the colour of the solution to red. This indicates the termination of the process. The volume of our acid test-liquor, which has been required to produce this change, can now be seen from the

burette; and, as we know the quantity of acid it contains, we can readily determine, by calculation, the amount of soda this quantity indicates. If, for example, 63 grains of oxalic acid have been employed, then our alkaline solution contains 40 grains of soda. If the quantity of acid used has been smaller, a simple rule of three sum will enable us to ascertain the corresponding amount of soda. Potash and ammonia may be determined in the same manner; and, by a very slight modification of the process, the alkaline carbonates and bicarbonates.

The capabilities of our test-liquor are by no means yet exhausted. By its aid we are enabled also to estimate the value of acids. With this view we prepare a solution of pure soda, and determine the quantity of hydrate of soda in a measured volume of it, in the manner just described. The strength of the soda-solution having been thus ascertained, nothing is easier than the determination of acids by its aid. The acid to be analyzed, say sulphuric acid, is weighed, diluted, and coloured red by the addition of a few drops of an infusion of litmus. The soda test-liquor is then gradually added to the solution, till its colour changes to blue. This indicates that the point of saturation has been reached. The quantity of soda required to produce this change gives, by calculation, the amount of sulphuric acid in the specimen, 40 grains of soda ( $\text{NaO}$ ,  $\text{HO}$ ) being equivalent to 49 grains of sulphuric acid ( $\text{HO}$ ,  $\text{SO}_3$ ). Muriatic, nitric, and acetic acids may be determined in a similar manner.

The second subdivision of volumetrical processes comprehends all analyses in which oxidation or reduction takes place, or both together. The agents employed for oxidation are permanganate and bichromate of potash, iodine, &c. Those for reduction are protoxide of iron, arsenious and sulphurous acids, hyposulphite of soda, zinc, &c. The determination of iron is, perhaps, the most important in this division. According to this method we estimate the quantity of iron present in any solution, by the amount of oxygen necessary to raise it from the state of a proto to that of a per-salt. The body usually employed to furnish the oxygen is permanganate of potash, or chameleon mineral as it is commonly called, the solution of which has a deep purple colour. One equivalent of this ( $\text{KO}$ ,  $\text{Mn}_2\text{O}_7$ ), by giving up five equivalents of oxygen, peroxidizes 10 equivalents of protoxide of iron:— $10(\text{FeO}) + 5\text{O} = 5(\text{Fe}_2\text{O}_3)$ . It also converts the same number of equivalents of protochloride of iron (containing excess of hydrochloric acid) into perchloride; the necessary chlorine in this case being obtained from the excess of hydrochloric acid

present, which is decomposed by the oxygen of the "chameleon" thus:— $10(\text{FeCl}) + 5\text{O} + 5\text{HCl} = 5(\text{Fe}_2\text{Cl}_3) + 5\text{HO}$ .<sup>a</sup>

In order to determine an unknown quantity of iron by means of this body, it is necessary to prepare a solution of it, and ascertain, by experiment, what volume of the solution is required to convert a known quantity of pure iron from the state of protochloride to that of perchloride. This is readily done by dissolving about 10 grains of pianoforte wire (which is sufficiently pure) in excess of hydrochloric acid, with as little exposure to air as possible. The protochloride thus formed is diluted with water, and the chameleon added, drop by drop, from the burette, the solution being agitated all the time. The peroxidation of all the iron, and consequently the termination of the process, are indicated by the solution assuming a permanent wine-red tint, which is produced by the presence of a trace of undecomposed chameleon. This colour could not appear as long as the solution contained the smallest quantity of protochloride, as this would, by decomposing the "chameleon," destroy its colour. We have now only to ascertain how many cubic centimetres of our solution have been employed. If 3OCC, then 3OCC = 10 grains of iron.

Having determined the strength of our test-liquor we can readily estimate, by its aid, the value of hematite and other iron ores. A weighed quantity of the hematite is dissolved in hydrochloric acid, by which means we obtain a solution of perchloride of iron,  $\text{Fe}_2\text{O}_3 + 3\text{HCl} = \text{Fe}_2\text{Cl}_3 + 3\text{HO}$ . This we must, of course, reduce to the state of protochloride before we can employ our oxidizing agent upon it. The reduction is effected by heating the acid solution with pure zinc, till a drop ceases to colour sulphocyanide of potassium, a proof that all the iron is reduced to the state of protochloride. The solution is now diluted and the chameleon added as before. If 3OCC of the chameleon have been employed, then our specimen contained 10 grains of iron. The results are very exact. This process can be applied to the analysis of highly complex solutions, containing, besides iron, silica, alumina, lime, &c. The chameleon searches out the iron, oxidizes it, but neither affects nor is affected by the other ingredients.

By means of the above process we are enabled, indirectly, to

<sup>a</sup> The complete decomposition which takes place in haloid and oxygen acid salts is expressed by the following equations:— $10(\text{FeO}, \text{SO}_3) + 8(\text{SO}_3) + \text{KO}, \text{Mn}_2\text{O}_7 = 5(\text{Fe}_2\text{O}_3, 3\text{SO}_3) + \text{KO}, \text{SO}_3 + 2(\text{MnO}, \text{SO}_3)$ .  $10(\text{FeCl}) + 8(\text{HCl}) + \text{KO}, \text{Mn}_2\text{O}_7 = 5(\text{Fe}_2\text{Cl}_3) + \text{KCl} + 2(\text{MnCl}) + 8\text{HO}$ .

estimate a multitude of very important bodies. A preliminary process is, however, necessary in these indirect analyses, in order to prepare for the application of the chameleon. This varies according as the substance to be determined has oxidizing or reducing properties. The preparation used with an oxidizing body may be illustrated by the case of peroxide of manganese. This method is based on two chemical facts:—1st. That one equivalent of peroxide of manganese, when undergoing solution in hydrochloric acid, evolves one equivalent of chlorine,  $\text{MnO}_2 + 2\text{HCl} = \text{MnCl} + 2\text{HO} + \text{Cl}$ ; and 2nd, that one equivalent of chlorine converts two equivalents of protochloride of iron into perchloride,  $2(\text{FeCl}) + \text{Cl} = \text{Fe}_2\text{Cl}_3$ . One equivalent of the peroxide, then, in dissolving, evolves enough chlorine to peroxidize two equivalents of iron. Therefore 56 grains, or two equivalents of iron, raised from proto to perchloride, indicate 43·57, or one equivalent of peroxide of manganese. The process is thus conducted:—About 15 grains of pianoforte wire are dissolved in hydrochloric acid, without exposure to air. A weighed quantity of the peroxide (about five or six grains) is introduced into a flask, strong hydrochloric acid is added, and a bent tube attached by means of a perforated cork. The open end of the tube is then plunged into the iron solution, and heat applied to the flask containing the manganese. The chlorine evolved changes a portion of the protochloride of iron into perchloride. The amount of iron unaltered is determined by the chameleon. This, deducted from the whole amount employed, gives the quantity of iron converted into perchloride by the manganese; 56 grains of iron = 43·57 grains of peroxide of manganese. Somewhat in this way we may analyze nitric, chloric, and chromic acids. Mr. Scott employs, in these determinations, sulphate of iron and ammonia, which is, in many respects, preferable to the metallic iron.

The preparation required for the “chameleon” in the case of reducing bodies may be illustrated by the determination of zinc ores. This method is founded upon the fact that freshly precipitated sulphuret of zinc reduces perchloride of iron to protochloride in an acid solution:  $\text{Fe}_2\text{Cl}_3 + \text{ZnS} = 2(\text{FeCl}) + \text{ZnCl} + \text{S}$ . Therefore 56 grains, or two equivalents of iron, reduced to the state of protochloride, indicate 32·5 grains or one equivalent of zinc. The analysis is thus conducted:—The zinc ore is dissolved and converted into sulphuret of zinc. This is washed, and introduced into a flask with an excess of perchloride of iron. The flask is then corked, and digested for some time at a gentle heat. As soon as the action is finished, the

contents of the flask are largely diluted, and the amount of iron reduced to the state of protochloride determined by the chameleon. Copper, sulphuretted hydrogen, &c., may be analyzed in this manner.

After the chameleon, perhaps the most important oxidizing agent employed in volumetrical analysis is iodine. By it we can readily determine arsenious and sulphurous acid, hyposulphite of soda, &c. These analyses are based upon the same principle as those performed by the chameleon. We estimate the quantity of arsenic in any liquor (to take a particular case) by ascertaining the quantity of oxygen necessary to raise it from a lower to a higher state of oxidation, from arsenious to arsenic acid. The iodine acts indirectly as an oxidizing agent in presence of arsenious acid, by decomposing water, the oxygen of which it liberates by combining with the hydrogen, according to the following equation:— $\text{As O}_3 + 2\text{HO} + 2\text{I} = \text{As O}_5 + 2(\text{HI})$ . 254 grains, or two equivalents of iodine, therefore, liberate a sufficient quantity of oxygen to convert 99 grains, or one equivalent of arsenious, into arsenic acid. We can ascertain, in a very striking and accurate manner, when this change is complete, by mixing a small quantity of a solution of starch with the arsenious acid before adding the iodine test-liquor. As long as the iodine is converted into hydriodic acid, according to the above equation, the solution remains colourless; but the moment all the arsenious is changed into arsenic acid, this conversion ceases, and the free iodine combining with the starch communicates a blue colour to the solution.

To prepare a test-liquor of definite strength we have only to dissolve a known weight of pure iodine in a known volume of a solution of iodide of potassium. In order to analyze arsenious acid with this we must dissolve a weighed quantity of it in a solution of carbonate of soda, introduce some starch-paste, and add the iodine solution gradually from the burette till the liquor assumes a permanent blue tint. We then calculate the amount of iodine in the volume of the test-liquor employed, and from this the amount of pure arsenious acid in our specimen. 254 grains of iodine indicate 99 grains of arsenious acid. The sharpness of the results obtained by this method are highly gratifying.

Of all the reducing agents employed in analysis by measure, the principal of which we have already enumerated, arsenious acid is the most valuable. By its aid we are enabled to determine chloric and chromic acids, chlorine, chloride of lime, bromine, iodine, &c.

It is, however, usual to employ at the same time our oxidizing test-liquor of iodine. The principle of this method is the converse of that just explained. We determine the amount of free chlorine in any solution (to take a particular case) by ascertaining the quantity of arsenious acid necessary to convert it into hydrochloric acid by the decomposition of water, according to the following equation:— $\text{As O}_3 + 2\text{HO} + 2\text{Cl} = \text{As O}_5 + 2(\text{HCl})$ ; 99 grains, or one equivalent of arsenious acid is, therefore, sufficient to convert 71 grains, or two equivalents of chlorine into hydrochloric acid. In order to prepare a test-liquor of definite strength, we dissolve a weighed quantity of pure arsenious acid (if it sublimes without leaving any residue it is probably pure) in a known volume of a solution of carbonate of soda. To analyze a solution of chlorine with this we introduce it into a burette, and add it gradually to the chlorine, till a glass rod dipped into it ceases to impart a blue colour to iodized paper, made by impregnating paper with a solution of iodide of potassium and starch-paste. As long as the liquor contains a trace of free chlorine it will communicate a blue colour to the paper, the chlorine combining with the potassium and liberating the iodine. We now learn from the burette the quantity of arsenious acid which has produced this change, and calculate the amount of chlorine from it; 99 grains of arsenious acid indicating 71 grains of chlorine. In these analyses it is usual to employ, also, the iodine test-liquor, as already stated. If we wish to use it in this case we add a measured excess of the arsenic solution to the chlorine water, that is, more than necessary to convert all the chlorine into hydrochloric acid, and afterwards estimate the amount of this excess, by mixing the liquid with starch-paste and adding the iodine test-liquor till a blue colour is produced. In calculating the results we, of course, deduct the amount of arsenic in excess from the whole amount used. The results are very accurate. In analyses by this method the two test-liquors should be comparable with each other.

Mr. Scott's third division of volumetrical analyses contains processes of precipitation. The most important analyses under this head are those of chlorine by means of silver, and *vice versa*, of silver by means of chlorine. Nothing can be easier, or give more exact results, than the determination of chlorine (which must be in the form of soluble chloride) by means of nitrate of silver. The reaction which takes place with common salt, is expressed by the following equation:— $\text{NaCl} + \text{AgO, No}_5 = \text{AgCl} + \text{NaO, No}_5$ . 170 grains, or one equivalent of the nitrate, are therefore sufficient to pre-

precipitate 35·5 grains, or one equivalent of chlorine. The test-solution is prepared, by dissolving a known weight of pure silver in nitric acid, evaporating to dryness, and heating cautiously till fusion. The fused nitrate is then dissolved in a known volume of water, and introduced into the burette. The chloride to be analyzed, say common salt, is weighed, dissolved in water, and mixed with a drop of a solution of chromate of potash. On adding the test-liquor, the silver combines with the chlorine, and forms a white precipitate of chloride of silver. The moment, however, the last trace of chlorine is removed from the liquor, and not before, the precipitate changes to red, from the formation of chromate of silver. This indicates the termination of the process. One equivalent, or 170 grains of the silver-salt, are equal to 35·5 grains of chlorine.

The determination of silver by means of common salt, gives also very accurate results. The test-liquor is made by dissolving a known weight of pure common salt, in a measured volume of water. This we add gradually from the burette to a weighed quantity of the silver to be analyzed, dissolved in nitric acid. The silver-solution should be rather acid, and should be well shaken after each addition of the common salt. The operator should also wait till the chloride of silver has completely subsided before adding a fresh quantity of the test-liquor. As soon as a drop of the test-solution ceases to render the liquor turbid, the process is finished. The burette is now read off, and the amount of silver calculated, 58·5, grains of common salt indicate 108 grains of metallic silver. All silver determinations are made in this way by Pelouze, in the Hotel de la Monnaie, at Paris.

Medical men will be glad to see in Mr. Scott's book, a description of Liebig's method for the determination of urea, and of Barreswell's for the determination of grape sugar.

In the foregoing sketch, we have endeavoured to give our readers an abstract of the subject which Mr. Scott has so ably handled in his present work.

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*Asclepiad—Clinical Essays.* By B. W. RICHARDSON, M.D.  
Churchill, London. 8vo, pp. 272. 1862.

FROM the preface of this work it would appear that it is the intention of the author "to bring out in occasional volumes, after

the manner of the volume now presented, a series of essays on subjects relating to medical science in its various departments." He does not bind himself to any regularity of publication, but hopes "that the volumes will, on an average, be issued half-yearly, or at least annually."

The book before us is the first of the promised series, and contains seven essays on the following subjects:—

1. On Subclavian Murmur.
2. On a Diseased Condition of the Nails.
3. On Reduplication of the Second Sound of the Heart.
4. Contributions towards a more perfect Clinical History of Scarlet Fever.
5. On Pulsatile Pulmonic Crepitation.
6. On Uremic Coma.
7. On Cardiac Apnea.

The first essay treats of subclavian murmur and its value as a diagnostic of disease. Of its importance the author says—"I cannot better prove it than by stating the fact, that, within the last three years, four cases have been referred to me as cases of aneurism in the thorax, which have proved, on further examination, to be nothing more than well-marked examples of subclavian murmur; cases, as we shall see hereafter, very innocent in their nature when compared with aneurismal disease." During a space of nearly two years the author sought diligently for the subclavian murmur in every case which presented itself at the Royal Infirmary for diseases of the chest; 2,000 patients of all ages were examined, of whom 1,011 were females, 989 males; the murmur was found well marked in 51 cases, and of these 48 were males and only 3 were females—the oldest being 74 and the youngest 18 years of age. Of these 51 cases, 18 were suffering from chronic bronchial affection, 12 were suffering from phthisis, 10 from anemia, 7 from dyspepsia, 3 from heart disease, and 1 from a combination of phthisis with bronchial disease. Dr. Richardson observed that the occupation of the patients had a considerable influence apparently in the development of this murmur. "In the vast majority of cases the patients were employed in manual labours, in the exercise of which the arms are thrown forwards and downwards. Thus there are no fewer than 15 cabinet-makers in the list, 4 carpenters, 2 sawyers, and so on." This subclavian murmur which, according to our author, is undoubtedly arterial, varies in different cases and at different times in the same case also. "It may be a soft musical

coo; . . . it may be a loud, coarse, almost snorting gush, conveying an unpleasant thrill to the ear; . . . it may be loud, yet so short, as to resemble a sound produced by a quick blow with dull resonance." The thrill, which is heard with the ear, is at times unmistakably felt with the finger, and, on one occasion, "the vibration could be seen when the finger was removed." The principal value of this murmur, as a diagnostic sign, is expressed at p. 15, where, having advanced the view, that it is caused by pressure, upwards and forwards, of the subclavian artery, "by a portion of solidified lung raised during inspiration," the author says:—

"In these examples there is, I believe, mostly, some solidification at the apex of the lung on the side on which the murmur is heard; the solidification may be due to deposit of tubercular matter, or to enlarged and indurated bronchial tubes. In such instances the character of the murmur varies according to the condition of the lung-substance. . . . Where tubercular deposit is laid down in one spot, immediately in contact with the artery, and where the deposit is hard, or where there is enlargement and induration of bronchial tubes immediately behind the artery, the murmur, which will still only be heard during inspiration, is sharp and shrill, or shrill and grating. It will continue so long as the breath is being held, and will disappear immediately on expiration. The murmur thus caused is often well marked in the early stages of phthisis, but disappears in later stages, when the deposit of tubercle has undergone the changes of softening and removal."

But this murmur was detected in persons in whom no pulmonary disease existed, and even in persons in perfect health. "In all these examples," says the author, "the pressure exerted on the artery is, in my opinion, brought about by the action of the subclavius muscle, and is the result of those occupations in which the arms are being constantly thrown forwards and downwards, as occurs in wood-planing, hand-sawing, French-polishing, and the like." This subclavian murmur may be confounded with aneurismal murmur, with valvular murmur, with pleuritic friction, and with bronchial coo. From all of these it may, however, be easily distinguished, and the rules for doing so are clearly laid down from p. 18 to p. 28.

What are the bearings of this diagnostic sign in practice? "Unless caused by mechanical occupations, it indicates the existence of some pressure exerted on the artery, by a structure posterior to the vessel

—in most instances we must infer by the lung. Thus it affords one diagnostic indication, both of bronchial disease and tubercular deposit . . . but in phthisis the murmur may prove one of the earliest indications of tubercle, and in two cases where there were general symptoms of phthisis, and a phthisical history, but where the ordinary physical signs of the disease were utterly wanting, I was supported strongly in the suspicion of actual tubercular deposition by the prominence of a subclavian *bruit*. In both these cases the suspicion was confirmed by after events.” We venture no opinion on the foregoing assertions, the reasoning is fair, we know Dr. B. W. Richardson to be an accurate and intelligent observer, and we trust that this diagnostic may be verified by others, as any symptom which could help us to ascertain the presence of tubercle in its earliest stage, would be a desirable addition to the means we already possess.

The peculiar diseased condition of the nails, which forms the subject of the second essay, though not common is yet sufficiently frequent. We have seen at least three examples of it. We do not think it of syphilitic origin, as in the three cases which were under our care for several months, we could not trace any history of syphilitic taint. We agree with the author in considering arsenic by itself, or in combination with iodine and mercury, as in Mr. Donovan’s well known triple compound, the best remedy in such cases; it completely succeeded with one of the two in which we tried it; in the second case there was considerable improvement, when we lost sight of the individual; in the third case the patient was suffering from hypertrophy of the heart, and died shortly after our seeing him, so that no time was afforded for a trial of either remedies. The author adds nothing in this essay to our previous knowledge of the disease.

The third essay, which we now mean to consider, treats of “reduplication of the second sound of the heart;” a rare symptom of but little value in a diagnostic point of view, and which the author ascribes to a want of synchronism in the closing of the aortic and pulmonary semilunar valves. He quotes Drs. Cockle, T. C. Webb, and Walshe, as having carefully studied this phenomenon; but makes no allusion whatever to Professor Stokes, who long ago called the attention of the profession to this reduplication of the second sound, and was, we believe, the first to assign to it its proper value and diagnostic import.

In the fourth essay, which consists of contributions towards a more perfect clinical history of scarlet fever, the author tells us

nothing new. He commences by showing, with the aid of the mortality tables of the Registrar-General, that scarlatina before the age of two is not rare, as had been asserted by some authors; out of a total of 12,962 deaths from scarlet fever in children under five years of age—occurring in the county of Kent in 1843, in London in 1845, 1846, and 1848, and in England in 1847—there were 4,163 deaths of babes under two years. As to the prevailing idea that females are more liable to the disease than males, he denies its correctness, and finds, from his own practice, that both sexes are equally subject to it; but, on referring to the mortality tables, there is a slight excess of deaths among females. As to its recurrence in the same individual, we are all aware that it does sometimes happen; but, as a general rule, we believe, with Willan, that scarlatina once had gives immunity to the patient from further attacks, just as much as small-pox. Concerning the poison of scarlatina and its mode of propagation, our author expresses himself as follows:—“The poison of scarlet fever, specific in its nature, is the most subtle of all zymotic poisons. It travels on material objects with infinite ease, and may be laid up in material objects for any period; yet, left to itself, it seems incapable of transit to any considerable distance, the air above not wafting it more than a few feet, if so far;” and at page 93 he gives an interesting account of several clear cases of transported infection. The eminently contagious character of the poison of scarlatina is well known, and we remember an anecdote of the late celebrated Dr. Graves, who, when asked what he would recommend as the best method of disinfecting a house after this disease, answered, after pausing a little to consider, “burn the house down.” In the treatment of this disease the author proposes nothing new, and confesses that a specific for its cure is yet to be discovered; he does not even allude to Belladonna, and seems to place more reliance on endeavouring to eliminate the poison by the kidneys and the skin, than by any other means. He also recommends the administration of ammonia or acetic acid, theoretically to keep the blood in a fluid state, so as to prevent death by the deposition of fibrin in the right cavities of the heart. “It is of importance,” he adds, “to administer the agent in small and frequently repeated doses, so that the blood may always contain the remedy.” If ammonia is selected for the treatment, he advises it to be administered until “it is very distinctly presented in the breath,” and describes a simple method by which it can easily be detected. This sounds very well; and so far as acetic acid is

concerned, if used to acidulate water, and given as a drink, we have not the least objection to it; but, with regard to ammonia, we would advise great caution: it will aid to keep the blood fluid, no doubt, but it will also imperil its vitality by destruction of the blood cells if pushed too far; and in a blood disease, like scarlatina, in which the safety of the patient so much depends on the successful elimination of a poison from the circulation, we would be extremely cautious before risking the further impoverishment of the blood by any substance that might endanger the vitality of its corpuscles.

The gargle he recommends in fetid ulceration of the throat is one of which we have no experience; but we shall try it on the first opportunity. It is composed of six ounces of solution of peroxide of hydrogen, containing 10 volumes of oxygen; tincture of myrrh one ounce; and rose water five ounces; to be used *ad libitum*.

The fifth essay treats of "Pulsatile Pulmonic Crepitation," by which the author means "a stethoscopic sign, in which, without any indication of pneumonia or tubercle, a crepitant sound, connected with pulsation, is presented to the ear." We cannot do better than let Dr. Richardson describe the new sound himself; we have never met with it, and, as he says at p. 130, "in the matter of treatment, a knowledge of the existence of pulsative crepitation is of no affirmative value, or at most of little," it is evident we have had no great loss; but as this abnormal sound appears to have been also noticed by Dr. Willis in *l'Union Médicale* of June 16th, 1860, we shall describe it in the author's own words:—

"About six weeks before the death of the patient (a lady suffering from emphysema of the left lung, with dilatation of the bronchial tubes, and mitral patency), after the subsidence of a very severe attack of dyspnea, during which I was unable to make a physical examination of the chest, owing to the oppression which the act produced, I was surprised, when the examination could again be borne, at hearing over the cardiac region an auscultatory sound, which was not only new to this special case, but new to my ear altogether. . . . An inch below the nipple, and bearing to the left side, there was a superficial sound which could be localized by the mouth of the stethoscope, and which, when present, obscured the systolic rasp altogether at that single point of observation. The sound was so superficial that it seemed directly beneath the stethoscope. . . . It was not a friction sound, it was not a murmur, it was not an ordinary crepitation, it was rather a coarse crackling noise, resembling that which is produced by the turning

of dried gorse, or the tearing of a piece of calico. The period of the sound was also peculiar, it was irregular as to time; and sometimes, with the stethoscope over the spot where it was most marked, it would be absent during an entire action of the heart. . . . . When the sound did appear, it was synchronous with the systolic rasp and clouded it. . . . This new sound was in some measure influenced by respiration. . . . . When the patient expired, and forcibly opposed the refilling of the chest with air, the new cardiac sound was absent altogether."

This lady died in a short time, and at the *post mortem* the author found "the pericardium adherent to the lung, and over the base of the left ventricle, to the left side, in the exact position over which the pulsatile crepitation had been heard during life, there extended a corner or tongue of lung. . . . . The appearance of the lung indicated that the structure had been subjected to compression at this overlapping point;" and the author concludes from this examination that the crackling was produced in the following manner: "the piece of lung thus placed was subjected to the impulse of the heart during its systole; and when the lung was inflated on inspiration the sudden compression produced by the impulse, elicited the crepitation by forcible expulsion of air from the air-vesicles." If this explanation be the correct one, and we consider it a very probable one, it is evident that this coarse crackling sound whenever it should happen to be heard, need not alarm the practitioner by its loudness as it would not appear to be otherwise formidable.

We have now reached the sixth essay—it treats of "uremic coma," and is the longest of the series, occupying no less than ninety pages. The author begins by saying,

"Uremia bearing in many instances a close analogy to other symptoms by known narcotic poisons, as well as to symptoms of apoplexy and even of epilepsy, the pure indications of uremic coma cannot be too early learned by the student, nor too carefully studied and recast by the matured practitioner. In the present essay, it is my object to speak only of the uremic condition as it absolutely presents itself in its most marked representation. As the patient appears when, comatose and convulsed, he lies the prostrated victim of uremic toxemia, I write of him, of his symptoms, of his pathology, of the immediate cause of his malady, and of the treatment which promises most certain and effectual relief."

Uremic coma might no doubt be mistaken for coma, arising from

the action of other poisons introduced into the system either accidentally or purposely, and at page 135, the author relates an interesting case of uremic poisoning, in which a curious inquest was held, and an analysis of the contents of the alimentary canal, and part of the viscera, performed—but he tells us nothing that was not already known. At page 143, however, where the author speaks of the treatment of uremic coma, he does teach us something new, and something which theoretically sounds well, but which we fear would prove very unsatisfactory in practice; he advises us to bleed the patient *pleno rivo*, but let us hear him.

“I attended a boy . . . 7 years old, through a severe attack of scarlet fever in 1850. . . . I heard nothing more of this child until January 21st, 1851, when I was summoned in haste at 10 P.M. I learned that the child, two days before, had been exposed to cold and wet, and that this exposure had been followed by suppression of urine. A little of the urine last passed had been saved for use, and was found to be albuminous . . . when I arrived . . . the body was cold; the pulse small; the convulsions extreme; the consciousness quite lost. . . . The pupils were widely dilated and fixed; the breathing was catching and irregular. I at once tied up an arm, and opened a vein freely. . . . I took no less than 16 ounces of blood from this little patient without a sign of syncope, and I left him composed and conscious. . . . On the 1st of February . . . the urine was passed freely, and was clear of albumen. On the 24th of February the child . . . was seized, after a hearty meal, with a repetition of his former symptoms.”

This time he was not bled, only leeches, and on the following morning he died. The author regrets much that he was “induced not again to draw blood from the arm.” At the *post mortem* the kidneys were found *pale* and *large*. Does he really believe that by again copiously bleeding this child of *seven years of age*, he would have saved his life? At page 145 the author recites another case, in which a copious bleeding in uremic coma restored consciousness, “while the blood was flowing the patient, for the first time in 70 hours, became sensible . . . (remained conscious for four days). . . . On the evening of the fourth day, the patient relapsed into the comatose condition, and on the following morning died.” During that interval of four days, the patient, who had suddenly become comatose, and had hopelessly remained so for 70 hours, was enabled to settle his affairs. This is often a matter of no little importance, and to obtain the opportunity of effecting such arrange-

ment, the bleeding is very admissible. Ligature of the aorta, though in itself a fatal proceeding, has been deemed advisable under such circumstances, in order to prolong life even for a few hours; but bleeding, with a view to curing the patient, seems to us utterly fanciful, in the ordinary cases of uremia, though we could imagine a case of very acute renal dropsy, with suppression of urine, occurring in a plethoric subject, in whom bleeding from the arm might temporarily prolong life, and give time for other remedies to come into action, and eventually save it altogether.

We have now reached the seventh and last essay of the *Asclepiad*, which is to tell us about "Cardiac Apnea;" the author's definition is the following:—

"By the term cardiac apnea, I mean a form of breathlessness often terminating in death, which is due to the fact, that in the cases in which it is presented, the pulmonic current of blood is being withdrawn from the air. In this apnea, the entrance of air into the lungs may be entirely unobstructed . . . it has been noticed at different times by various names, such as 'angina pectoris.'"

Cardiac apnea is an old acquaintance with a new name, and as we do not admit as proven all the causes of it which are laid down by the author, neither do we approve of this new name, and still prefer the old "angina pectoris," which conveys at once the idea of the ailment, without involving a theory which yet remains to be established.

The favourite theory of the author is that "the fatal paroxysm is due to an arrest of the flow of blood through the *right* side of the heart," caused by "slight filamentous deposits of fibrin around the tendinous cords of the tricuspid or mitral valves." He brings forward as proofs of the correctness of his views several *post-mortem* examinations of subjects which had died of cardiac apnea, and in whom fibrinous deposits were found occupying the right auriculo-ventricular opening, and hence passing from the right ventricle into the pulmonary artery; we have no doubt that he often did, and we would always expect to meet with such in every case where there had been a *protracted death struggle*, such as generally occurs in death from angina pectoris; but we are not prepared to admit that these fibrinous deposits arise except as a result of the prolonged death agony. It appears also to us that some of the cases enumerated can scarcely be classed as cases of angina pectoris, the one at

page 235, for instance, which looks more like a case of spasm of the glottis, although quoted as an "illustration of cardiac apnea."

The chapter on the diagnosis of this disease, which the author characterizes as "an apnea with open air passages; not panting breathlessness, but suppressed breathing," is very good, and the descriptions contained in it are graphic. The chapter on treatment is equally good; the advice to apply warmth to the precordial region as quickly as possible, during a paroxysm, by carrying hot fluids into the stomach, can not be too much impressed. *In extremis* the author recommends "artificial respiration; . . . the air should be gently introduced into the lungs, and, whenever practicable, should be raised in temperature to a degree equal, at least, to that of the body itself, 98° Fahr."

We have, at last, turned over the last page of the *Asclepiad*; with some of the articles we have been well pleased, with others, we have been, perhaps, disappointed; though, perhaps, more in consequence of our too great expectations from the pen of the able author of the essay on *The Coagulation of the Blood*.

We hope, notwithstanding, to have the pleasure of meeting with Dr. Richardson again; for we like original thinkers, even if we do not always subscribe to their views, or follow them in their deductions.

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*A System of Surgery—Pathological, Diagnostic, Therapeutic and Operative.* By SAMUEL D. GROSS, M.D., Professor of Surgery in the Jefferson Medical College of Philadelphia, &c. Illustrated by 1227 Engravings. 2nd Edition, enlarged and revised. Philadelphia: Blanchard and Lea. 2 vols., 8vo, pp. 1062 and 1134.

THREE years ago (November, 1859), we noticed the first edition of this work in terms of high commendation; and the fact that we have now to announce a second edition, affords most satisfactory evidence of the correctness of the opinion we then pronounced. This new edition has been enlarged and revised; the number of illustrations increased from 936 to 1,227; and altogether no pains

have been spared to make it worthy of a continuance of the patronage it has hitherto received.

It cannot be expected that, in a work of such dimensions, and embracing every subject having any bearing on surgery, there should not be many points on which opinions may differ, and sections into which errors may have crept. Of the latter we must say we have met with very few. Of the former, we would instance the directions as to the treatment of simple fractures of the skull with depression to some extent, but not sufficient to be productive of symptoms of compression. In these cases, Dr. Gross says: "If the bone be forced down considerably, so as to impinge very decidedly on the brain; or if it be comminuted or jagged at the edges, the sooner it be raised or removed the better, since, if it be allowed to remain, it cannot fail to become a source of trouble either by exciting inflammation or by causing unpleasant secondary effects." The teachings on this subject of all British surgeons of the present day, we need scarcely remind our readers, are at variance with those of our American confrere; they being unanimous in forbidding any operative interference in cases of simple fracture where there are not decided symptoms of compression; and even in compound depressed fractures without confirmed symptoms of compression, it is by many considered better, as a general rule, to leave the bone alone than to attempt to raise or remove it. In the paper published by Dr. Murney, of the Belfast Hospital, in a late vol. (vol. xxxiii., p. 284), it is stated that of 124 cases of simple fracture with depression, in which the bone was elevated, 50 per cent. died; whereas, of 25 cases in which no operation was performed, only 28 per cent. proved fatal, though in many of the latter who recovered, symptoms more or less grave were present for a time—a statement that we would commend to Dr. Gross's consideration when preparing the next edition of his work.

Dr. Gross's acquaintance with surgical literature is most extensive and profound; and he has availed himself, very freely indeed, not only of the writings of others, but of their illustrations too. In one case, however, that has attracted our attention—dislocation of the first phalanx of the thumb on the dorsum of the metacarpal bone—he has endorsed the claims of countrymen of his own, Professor Crosbie, of New Hampshire, and Dr. Cutter, of Massachusetts, to the discovery of a mode of treatment originally described by Sir Charles Bell, and constantly practised in the hospitals of this city, where it is facetiously called the "homeopathic plan,"—a not

inappropriate name given to it, we believe, by Mr. Adams, of the Richmond Hospital. The procedure consists in first forcibly pushing the phalanx backwards till it stands at right angles with the back of the metacarpal bone, and at the same time pressing its base forwards till its articular surface is brought over the edge of that of the other, when sudden flexion towards the palm will accomplish the rest; and we are so convinced of its efficacy, that we are unwilling to allow the credit of its suggestion to be carried off from our countryman.

We cannot close this brief notice of Dr. Gross's most valuable and excellent compendium of surgery without again drawing attention to it, as we did in our notice of his first edition, as an evidence of the progress our American brethren are making towards establishing a literature of their own, and expressing our heartfelt wishes that the present deplorable internecine warfare may soon terminate, and leave them again free to pursue the arts of peace and humanity.

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*Further observations on the Structure and Treatment of Uterine Polypi.* By ROBERT LEE, M.D., F.R.S., Obstet. Phys. to St. Georges' Hospital. Medico-Chirurgical Transactions, Vol. XLIV., for 1861.

WE have been induced by the very great importance of this paper, and the great value of the materials it affords, to make it the subject of a special notice, instead of embodying it in our review of the volume in which it is to be found. It contains the histories of 105 cases of uterine polypi, being all the cases of this disease that Dr. Lee has met with, both fortunate and unfortunate, and the histories of these are so recorded, as to enable each reader to study and draw conclusions from them, almost as if he had himself seen the cases: and we mean, in the remarks we have to offer, to lay before our readers the conclusions we have drawn from them, as well as those of the author.

The paper opens with a *résumé* of the author's previous observations on the structure of polypi; recapitulating the varieties he has described, which we may name the fibrous, the mucous, the cystic, the glandular, and the erectile. Dr. Lee further refers to his

paper in the Transactions for 1850, in which he says, that he demonstrated the manner in which the circulation of the blood is carried on throughout the substance of fibrous tumours of the uterus, and demonstrated that, like the walls of the uterus, they are everywhere pervaded by arteries and veins, and we presume he means that we should take the same description as being true of fibrous polypi. The remainder of the paper is taken up with the history of the cases, with a view to the recommending of the use of the ligature for the removal of polypi, and to the refutation of Dr. West's statement, as to the very high mortality arising from its use in Dr. Lee's own cases, as reported in his *Clinical Reports of Ovarian and Uterine Diseases*, published in 1853.

Of the cases now recorded many were not under Dr. Lee's own care, but were seen by him at some of their stages. There is a good deal of obscurity in the manner in which Dr. Lee sums them up. He treats them as a total of 103; in three, he says, no operation was performed, and the result is not known; in two the polypi disappeared spontaneously. Of the 98 cases which remained 5 died before any operation was attempted. After deducting these 10 cases there remain 93, of which 8 died and 85 recovered. Of the fatal cases one, No. 7, was in a moribund state when the ligature was applied; in another the polypus was in a sloughing state when the ligature was applied; in No. 11 the polypus was torn by hooks in an unsuccessful attempt to pull it down before the ligature was applied, and the patient died of peritonitis; and in No. 16 the patient died of peritonitis, before the ligature had cut through the pedicle. The following extract gives, in Dr. Lee's own words, an account of the treatment he adopts:—

“By an examination of this condensed history of 103 cases of uterine polypi it will be seen that, of the last fifty cases which have come under my own care, and in which the operation for the removal of the polypi has been performed by me, not one patient has died. The various methods of treatment, having been minutely described in the histories of the cases, do not require to be again detailed.

“Being fully aware that the greater number of large uterine polypi are fibrous tumours covered with the lining membrane and a portion of the muscular coat, and that these polypi have large arteries and veins distributed throughout their substance, in operating upon them I have not ventured to drag them out of the vagina with forceps of any kind, and divide their roots with the knife. The ligature has usually been applied in such cases with the bent rod, and the sloughing polypus has been

removed when the ligature was long in dividing the root. By this means all the evil consequences which could be produced by the vagina being long filled with a putrid mass have been completely avoided; and to this course I do think may be attributed, in a great degree, the uniform success of operations performed by me of late. Even when the polypi have been of comparatively small size, and the ligature has been applied with the double canula, I have not considered it safe to leave the ligature many days around the root of the polypus, when the circulation through the substance had been destroyed, and the mass of the tumour was in a sloughing condition. By twisting the canula firmly round, the ligature has frequently passed through the root, and the polypus has been removed several days before this would have happened if the ligature had been merely tightened. Even in cases where the root of the polypus has not yielded to this treatment, the ligature has been removed, and the dead polypus has come away harmlessly after some days, tepid water having been freely injected into the vagina. In all cases it has appeared of the utmost consequence to watch the condition of the uterine organs and of the general system, as it has been clearly proved that inflammation is the most common cause of death after the application of a ligature around the peduncle of a polypus."

On analyzing the cases recorded, more fully than the author has done, they seem to us not to bear out the remarks with which he has prefaced them, and neither to justify the very uncourteous remarks he has made about Dr. West, nor to prove the great superiority of the ligature over all other methods of removing polypi. His cases may be divided into eight classes, as follows:—

1. Removed by ligature	-	-	-	-	-	43 cases, 6 died.
2.       "               "       and immediate excision						7   "   1   "
3.       "               "       and subsequent excision						13   "   2   "
4.       "               torsion	-	-	-	-	-	21   "   0   "
5.       "               excision	-	-	-	-	-	3   "   0   "
6. Mode of removal not stated	-	-	-	-	-	2   "   0   "
7. No operation performed	-	-	-	-	-	12   "   5   "
8. Particulars not known	-	-	-	-	-	4   "   -   "
						<hr/>
						105   "   14   "

Of the six patients who died after removal of the polypus by ligature, one was dying at the time of the operation, viz., No. 7 on register, two died from peritonitis, Nos. 11 and 16, and three from pyemia, viz., Nos. 40, 44, and 88. The patient who died after the

removal of the polypus by ligature and immediate excision, No. 20 on register, had the tumour in a sloughing state, and the passages inflamed before the ligature was applied, and symptoms of pyemia began with a rigor the day after the operation was performed; and two others, in whom a ligature was applied, and the polypus subsequently removed when it was in a sloughy state, viz. Nos. 34 and 37 died from pyemia. It is further to be observed, that of the cases treated with the ligature alone, and who recovered, one suffered from phlebitis, No. 28; and one from a pelvic abscess, No. 58; and one of the cases treated by ligature, and in which the polypus was afterwards twisted off, also suffered from phlebitis, No. 98.

Dr. Lee makes the assertion, that "of the last fifty cases which have come under my own care, and in which the operation for the removal of the polypi was performed by me, not one patient has died." The statement appears to be made somewhat loosely, at least it is not borne out by the register. On examination it will be found that of the last 51 operations recorded, but one patient died, and she was not operated on by Dr. Lee, but neither were eight others of the 51 cases; and if we take the last 50 cases recorded as having been operated on by Dr. Lee himself, we must begin with No. 33 on the register, and then it will appear that four of the cases died, viz., Nos. 34, 37, 40, and 44; but, as we have said, we believe Dr. Lee means us to understand that of the last 51 cases but one died, and he did not operate in that case.

One who criticizes the statements of others so freely as Dr. Lee does, and hesitates not to impute misrepresentation and concealment, should at least be careful as to the correctness of his statements as to his own success. We do not in the least suspect that there has been any intention to mislead in the present instance, but we cannot avoid expressing a hope that the error now pointed out will lead to a little more of true charity on future occasions.

The statement is one of great interest, and calculated to arrest the most profound attention; but the question arises, does this great success depend on the mode in which the operation was performed, or on the nature of the cases operated on? We have further analyzed the register to determine this question. We find altogether 89 operations recorded, out of which 9 deaths occurred, or nearly 10 per cent. We divide the cases into two series—the one consisting of the first 38 operations, and the other of the 51 last performed, and in the following table show how they were circum-

stanced as to the thickness of the pedicle and the mode of operation.

## FIRST SERIES.

## Ligature:—

Polypus small as a pea, . . .	1 case	0 died
„ small, slender pedicle, . . .	3 „	0 „
„ large, do. do., . . .	2 „	0 „
„ large, thick do., . . .	12 „	4 „
„ size of pedicle not stated, . . .	1 „	1 „

## Ligature and subsequent excision (after some days):—

Polypus large, pedicle small, . . .	2 „	1 „
„ do. do. thick, . . .	1 „	1 „
„ small, do. do., . . .	1 „	0 „
„ size of pedicle not stated, . . .	0 „	0 „

## Ligature and immediate excision:—

Polypus vascular or cystic, pedicle small, . . .	2 „	0 „
„ large, thick pedicle, . . .	2 „	1 „
„ size of pedicle not stated, . . .	1 „	0 „

## Excision:—

Character of polypus not defined, . . .	1 „	0 „
Lip of uterus? . . .	1 „	0 „
Polypus long and pendulous, . . .	0 „	0 „

## Torsion:—

Polypus small, hard, . . .	0 „	0 „
„ do., soft, . . .	5 „	0 „
„ large, do., . . .	0 „	0 „
„ double, small, . . .	1 „	0 „

## Torsion and immediate excision:—

Polypus soft and vascular, . . .	0 „	0 „
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Operation not stated, . . .	2 „	0 „
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38 „ 8 „

## SECOND SERIES.

. . .	1 case	0 died
. . .	6 „	0 „
. . .	2 „	0 „
. . .	8 „	1 „
. . .	6 „	0 „

. . .	0 „	0 „
. . .	8 „	0 „
. . .	0 „	0 „
. . .	2 „	0 „

. . .	0 „	0 „
. . .	1 „	0 „
. . .	1 „	0 „

. . .	0 „	0 „
. . .	0 „	0 „
. . .	1 „	0 „

. . .	3 „	0 „
. . .	10 „	0 „
. . .	1 „	0 „
. . .	0 „	0 „

. . .	1 „	0 „
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. . .	0 „	0 „
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51 „ 1 „

It is at once seen, that of the nine deaths seven occurred in cases where the pedicle is stated to have been “thick.” In one (No. 44 on Dr. Lee’s register) the size of it is not stated, but as in it the ligature took some days in coming away, notwithstanding that the polypus was in a sloughing, disorganized state when it was applied; and in the other, No. 34, though the polypus was large the pedicle is said to have been “not very thick,” and the ligature, had not cut through it on the sixth day, when it was twisted off, we may fairly infer that in all the fatal cases the pedicle was “thick,” and that it is its thickness that determines the risk of the operation.

Now, it will be seen that the proportion of thick pedicles in the second series is less than in the first. If the 38 cases in the first series afforded 16 thick pedicles, the 51 of the second should have afforded 21.47; if, however, we assume that the pedicle was thick in all the cases where its size is not stated, the proportions will be equalized, we will have, in the first series, 18 thick pedicles, 26 in the second; but of the 18 patients in the first series, 7 died (excluding No. 34, "not very thick"), and of 26 in the second, only one died; we must, therefore, look for some additional circumstance to account for the fatality in the first series, and this we find in the mode of operation adopted, viz.:—that in the first series a putrefying mass was allowed to remain in the vagina, till it was thrown off by sloughing; and in the second the polypus was removed before putrefaction had made much progress. The fact that in each of the fatal cases except one, No. 7, where the patient was *moribund* when the operation was performed, the polypus is described as having become putrid, confirms this view.

In conclusion we must say, that Dr. Lee has not convinced us of the great advantages of the ligature over all other methods of removing uterine polypi, not even when combined with excision; but he has satisfied us, that the greatest danger of the operation arises from the putrefying of the polypus, and that any means that would remove the polypus at once, and at the same time prevent hemorrhage, such as the *écraseur*, which Dr. Lee has not used at all, is the best and most advisable.

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*Die Krankheiten des Ohres, ihre Erkenntniss und Behandlung.* VON DR. VON TRÖLTSCHE, Praktischer Arzt und Privatdocent in Würzburg.

*The Diseases of the Ear; their Diagnosis and Treatment.* By DR. VON TRÖLTSCHE, Practitioner and Lecturer in Würzburg. Würzburg, 1862. 8vo, pp. 262.

IN the number of this Journal for August, 1861, we gave a notice of a treatise on the anatomy of the ear, in its practical bearings, by Dr. von Tröltsch, the author of the work now before us, and alluded briefly to the apathy displayed by the profession at large upon the subject of aural surgery. We would again direct atten-

tion to this branch of medicine, by referring at length to the work whose title heads this article. The idea is still very general that aural diseases are not amenable to the ordinary rules of art, or the treatment of the qualified practitioner, and hence the quack and nostrum-monger are so frequently resorted to. The opinion of the public is, in some measure, attributable to members of the profession, some of whom have yet to learn that ear diseases are as curable as those of the eye or any other organ. We daily hear skilled and well-qualified practitioners mockingly inquire "what can be done for deafness?" and if we peruse the medical periodicals of the day, we not unfrequently find aural surgery treated of in a manner suitable only to the days before Saunders commenced his valuable researches in that speciality. We remember, not long ago, reading in one of the leading journals a report of several cases of deafness, in not one of which was there any mention made of the physical signs in the meatus or the membrana tympani, in not one of which the speculum had been employed. As well might we publish the report of diseases of the eye, of the chest, or of the uterus, without having recourse to those means which art has placed at our disposal for the elucidation of their morbid appearances. When we use those faculties of observation and reasoning in aural cases, which we do in other medical cases, we shall find that they are governed by the same general laws; that diseases of the ear are analogous to diseases in other parts of the body, and require analogous treatment. In this as well as in every other speciality, however, its practitioner must possess a well-educated mind, an observant eye, but, above all things, a thorough knowledge of general medicine, pathology and therapeutics; and without such knowledge, we believe no man has ever attained to real eminence in any speciality, or gained a lasting reputation. Every speciality possesses, no doubt, certain technicalities, which it is scarcely possible for the student to acquire during the brief time he spends in the wards of an hospital; but if the general knowledge of disease he gains be brought subsequently to bear on affections of special organs, his treatment thereof will be rational and not empirical.

Dr. von Tröltsch's work consists of a series of academical lectures delivered in Würzburg; a few of the subjects treated in which we now propose to consider.

The first which naturally is suggested is the means employed to see the external meatus and membrana tympani. Peter de la Cerlata, professor of surgery in Bologna, in the latter end of the

fifteenth century, was, we believe, the first to recommend a "speculum or other instrument" wherewith to inspect the meatus. The most useful instrument of this class is the tubular speculum, described by Mr. Wilde, in 1844, in the former series of this journal, and which von Tröltzsch figures and recommends as the best of its kind. Its introduction is simple and painless, and with it we are enabled, by means of good sunlight, to inspect both the passage and the membrana tympani.

To meet the necessities of dark gloomy weather various lamps and artificial lights have been employed, none of which, however, answer fully the required purposes. Dr. von Tröltzsch has devised a new method for illuminating the membrana tympani, which we have found very useful, and which we can recommend. It consists of reflecting, instead of transmitting directly, the ordinary daylight through the speculum, by means of a concave mirror about three inches in diameter, and of about five-inch focus, with a central aperture. This mirror is attached either to a handle like the ophthalmoscope mirror, or, in order that when necessary both hands may be free, to a spectacle frame like the laryngoscope mirror. The ear under examination must be turned away from the light. When we consider how many houses in cities are so situate that it is impossible to obtain a good direct sunlight through any of the windows, and the necessary position of the examiner's head, and also the impracticability of examining the ears of persons unable to move out of bed, we perceive the difficulties which the surgeon encounters in making an accurate diagnosis from the physical signs. In the great majority of cases the plan we have just mentioned meets all these difficulties. Although artificial light is, as a rule, inapplicable, there are occasions on which its employment becomes necessary—as, for instance, during the dense fogs which occur in cities, and at night—and then the mirror described above may be used with advantage to reflect such light. Von Tröltzsch, who brought this method of illuminating the ear under the notice of the congress of German physicians in Paris, in 1855, says, that it was not until a subsequent period he became aware that a similar plan had been proposed, in 1841, by a Dr. Hoffmann, in Westphalia.

The chapters on *otitis externa*, and *otorrhea* are replete with sound practical information. The author follows in the footsteps of his illustrious British teachers in urging the necessity of checking and "drying up" discharges from the ear; he says he has "always found that in gradual cessation of the otorrhea the patient gained

in general health, whereas, on the contrary, when the discharge was allowed to continue undisturbed, many individuals sickened and finally died." If we bear in mind the anatomical relations of the parts, and remember that the bony partitions are very thin and delicate which separate the internal ear from the facial nerve, the transverse, superior petrosal and lateral sinuses, internal jugular vein, and internal carotid artery, and the middle lobe of the brain, and that these laminae of bone afford but little resistance to inflammatory action, we can readily understand how a simple discharge, extending, either by continuity of surface or by metastasis, to the parts we have mentioned, may produce facial paralysis, phlebitis, inflammation of the dura mater and brain, and abscess in the latter. Hence, in every case of otorrhea we should be on our guard, for as long as the discharge continues the patient's life is scarcely insurable at the ordinary rate; as the author remarks, "every otorrhea may, under certain circumstances, become a life-endangering disease." The following case will illustrate these remarks:—We were lately called upon, between one and two o'clock in the morning, to visit a gentleman, about 27 years of age, whom we found suffering agonizing pain in the right ear, from which there had been occasionally a discharge for a long time previously. He had also suffered from a paroxysm of great pain during the previous night, and had, about 12 hours before, consulted Mr. Wilde, who made a careful examination of the ear, pronounced the case to be one of inflammation, and ordered the application of leeches round the meatus, which treatment had been carried into effect about three o'clock. There was no swelling, redness, or tenderness over the mastoid process; but, as the pain was intense, we applied several more leeches round the orifice of the meatus and also over the mastoid process, and ordered warm applications to the ear. About eleven o'clock we saw the patient, in consultation with Mr. Wilde, when we found him much relieved from the pain in the ear, but suffering from headache and nausea. There was no discharge from the ear at the time. He had, however, a remarkably quick pulse, and that peculiarly anxious "drawn" expression of countenance so well described in Mr. Wilde's *Aural Surgery*, as characteristic of certain serious inflammatory affections of the ear.

Under the circumstances it was thought advisable to place him, as soon as possible, under the influence of mercury, and small doses of calomel and blue pill, guarded with a little opium, were ordered to be administered every four hours. The serious nature of the

case was explained to the gentleman's relatives, as well as the circumstance of the necessity for the treatment adopted. The friends, however, perhaps considering our alarm groundless, informed us, at a later period of the day, that special advice was no longer required. Our fears, however, were not groundless, for the patient died within a week or ten days, we have been given to understand, with all the symptoms of auro-cerebral disease. It may have turned out one of those cases which have been so well described by Mr. Toynbee, and the operation for the relief of which, as shown by Mr. Wilde, was described in Sweden by the late learned Professor Retzius,<sup>a</sup> and in Germany by von Trötsch.

*Polypi*, which constitute a frequent source of otorrhea, arise, according to the observations of Mr. Toynbee and Mr. Wilde, most frequently from the wall of the external meatus; von Trötsch, however, states that these growths arise "most frequently from the mucous membrane lining the cavity of the tympanum and the upper part of the Eustachian tube." He has also seen them spring from the membrana tympani, and most frequently from the superior and posterior part of that membrane, close to its margin. "In one case," he says, "I found in the subject besides a polypus of the meatus, and another coming from the upper portion of the tube, a third, which, from its entire construction and its microscopical character, proved to be the membrana tympani in all its layers, degenerated into a polypus structure. I have frequently seen, in the living, excrescences which, from their form, position, and extraordinary sensibility, must be looked upon as abnormal growths of the entire membrana tympani." We have never yet met with such instances, nor do we believe they occur in this country. Small button-shaped excrescences are occasionally seen on the membrana tympani, which appear, at first sight, to have their origin in the membrane, but which prove, on more careful examination, to proceed from the cavity of the tympanum.

The greater part of the work under consideration is devoted to the *inflammations of the middle ear*, which are classified as acute and chronic simple, and acute and chronic purulent, "catarrh."

The author reminds us of the fact, that the mucous membrane lining the cavity of the tympanum and mastoid process, is inseparably connected to the periosteum, and acts both as mucous and periosteal membrane; and that hence every inflammation of that structure is, at the same time, practically also a periostitis. In

<sup>a</sup> Medical Press, Vol. xlii, p. 374.

consequence of acute or chronic simple inflammation of this membrane, the ossicula become frequently adherent, or connected by membranous bands, to one another, or to the adjacent parts, and the membrana tympani, in like manner, becomes connected to the ossicles or to the inner wall of the cavity; and in chronic inflammations, he says, "the mucous membrane becomes thickened, and the bones hypertrophied; whilst in acute inflammation it becomes ulcerated, and the bones atrophied and carious." Such inflammations frequently have their origin in the naso-pharyngeal space, and are propagated along the Eustachian tube to the middle ear, causing, in the tube, swelling of its membrane, secretion of mucous, and obstruction to the passage of air. The principal part of the treatment adopted and recommended by the author for these inflammations and their results, consists of the forcible injection of air through the Eustachian tube, the introduction of medicated vapours to the cavity of the tympanum, and especially the vapour of muriate of ammonia. With respect to the therapeutic action of the air-douche, he says:—

"It sets in motion, and drives into the mastoid process, or into the throat, every removable impediment, such as mucous or pus. It acts, therefore, as a purifier in bringing air to the tube and cavity; it removes the secretion, separates the walls of the tube which are, possibly, becoming affixed, and thus restores, momentarily, or for a longer period, the communication and balance of air between the pharynx and cavity. Furthermore, inasmuch as it makes tense and bulges out the membrana tympani, as we may perceive, any existing abnormal fixations or adhesions of that membrane are, necessarily, also made tense, stretched, and, under favourable circumstances, loosened or torn across."

A not unfrequent cause of sudden deafness is, no doubt, an accumulation of mucus, either in the Eustachian tube, or in the cavity of the tympanum, and which may be removed by Eustachian catheterism. From the displacement of such secretion into the mastoid process, and the filling up of its cells, we should have expected some unfavourable result, but the author states, that, in 25,000 cases, in which he performed catheterism, he never saw any such. Again, in acute simple catarrh of the middle ear, where there is agonizing pain, the membrana tympani red, and the parts internal to it, no doubt highly vascular, we should have hesitated to inject, forcibly, a current of air, did not the author assure us that it was rather beneficial than otherwise; and that the pain

became less, and the symptoms improved from the first application. We would compare the action of the air-douche, in inflammation of the membrane of the tube, and cavity of the tympanum, to that of belladonna or atropine in inflammation of the iris, inasmuch as they both, when employed in time, prevent adhesions of the adjoining parts. The author recommends it, not only as a therapeutic agent, but also as a means of diagnosis; he says:—

“Although we are able, in the great majority of cases, to diagnose ‘chronic catarrh of the ear’ from the appearance of the membrana tympani, yet catheterism and the air-douche are necessary, in order to make an accurate examination. By means of them we recognise affections of the tube—whether its mucous membrane is swollen and hypertrophied—whether it is normal in size or strictured—whether abnormal secretions are present in it, or in the cavity, &c. In many cases abnormal conditions of the membrana tympani are recognised only by means of the air-douche. By its employment we can judge of the elasticity of that membrane, of its mobility, or abnormal fixations, which we could not pronounce decidedly upon by any other means. But, granting the great importance of catheterism of the Eustachian tube, in the diagnosis of ‘chronic catarrh,’ we must guard against overestimating that operation, and drawing conclusions from its results, which, if critically analyzed, and from an anatomical point of view, are not warranted.”

We would caution our readers against the indiscriminate use of catheterism of the Eustachian tube, for occasionally very untoward, even fatal results, have followed that operation. The cases in which von Trötsch recommends its employment are those of acute and chronic otitis interna, without purulent secretion, and chronic otitis interna, with purulent secretion.

*Otitis interna*, with purulent secretion, has been found by von Trötsch to exist in many infants which he dissected. These infants, of whom the youngest was 17 hours, the eldest one year old, resembled, and in many instances belonged to, that class of illegitimate, half-starved, neglected, foundlings, in whom are found atrophy, inflammation of the intestines, bronchitis, and venous congestion of the coverings of the brain and of that organ itself. In 48 temporal bones of such children he found the middle ear normal in 13 instances, the petrous portion carious in two, and the remaining 33 presented the anatomical features of purulent otitis of the middle ear and mastoid process. “The cavity of the tympanum, upper part of the tube, and the cells of the mastoid process, were filled with a greenish

yellow, creamy, or gelatinous-like fluid, which resembled pus in all respects, and presented, under the microscope, all its characters." These results are very remarkable; and although they are at present merely pathological facts, they will, no doubt, as science advances, become of practical importance. The author suggests that a great mass of children, supposed to be suffering from meningitis, are, in reality, labouring under disease of the ear.

*Fracture of the malleus* is an accident of very rare occurrence. Von Tröltsch relates an instance which came under his own observation; another has been lately recorded by the distinguished and learned comparative anatomist, Hyrtl, to whom we are indebted for so many observations and researches in the organ of hearing. Mr. Toynebee possesses, in his great and valuable museum illustrative of the pathology of the ear, a specimen of fracture of the inferior extremities of the malleus.

Von Tröltsch enjoys the reputation of being at present the first aurist in Germany, and forms one of the staff of the Würzburg University, which numbers amongst its professors Scanzoni, Kölliker, Heinrich Müller—names already well known to the British medical public. Many of our readers will, no doubt, remember him while residing in Dublin, and recollect his admirable descriptions, in a German medical periodical, of the Dublin School of Medicine and its representatives, towards whom he expresses a lively sense of gratitude for the kindness shown him, and the instruction imparted to him. Those who are acquainted with the writings of our best aural surgeons will not find very much that is new to them in these lectures; but they will find them thoroughly practical, and containing much valuable information on pathological subjects, as well as on the state of aural surgery on the continent. Compared with other German publications on the same speciality, this work ranks very high, and is characterized by the absence of many unscientific and untrue doctrines.

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*The Renewal of Life; Clinical Lectures, Illustrative of the Restorative System of Medicine, given at St. Mary's Hospital.* By THOMAS K. CHAMBERS, M.D., &c., &c. London: J. Churchill. 1862. Pp. 430.

THERE are two classes of medical works to be met with daily in general circulation—the strictly professional, addressed solely to

the profession, and the pseudo-professional, addressed to the public in general, and to hypochondriacs in particular. When we chance to meet such as the latter, we either pass them by or punish them, as we deem it our duty to endeavour, by all means in our power, to discourage such productions by exposing them. We, however, meet sometimes, though rarely, we are thankful to say, with books partaking of both characteristics—books scientific, with a popular, catching title, which will attract the unprofessional reader, even more than the professional student. When dealing with such we naturally find ourselves rather in a difficult position; we may fully approve of the subject matter, at the same time that we heartily condemn the way it is presented; we have, however, no choice; our duty is plain, and however painful such duty, we shall always do it unflinchingly.

The book now before us seemingly belongs to this latter class, it consists of a series of clinical lectures, and fragments of lectures, delivered at different times, upon different subjects; we find much in it that we approve of, much that we utterly condemn, and we regret it extremely, for our pen can as easily trace words of praise as words of blame; and it is far pleasanter to us to write in the former than in the latter strain. To begin, then, we object to the title; why not call these 430 pages “Clinical Lectures delivered at St. Mary’s Hospital, by T. K. Chambers, M.D.”? Such title would have been amply sufficient for the professional man or the medical student, though it would just as certainly have failed to attract the unprofessional eye. But this was evidently what Dr. Chambers was aiming at, when he selected, as a title to his book, “The Renewal of Life!” Who would not renew his life if he could, though, perhaps, he would not like to live it over again? Which of us, on the shady side of remorseless 40, would not again renew his life, and with it the vigour of his mind and body? The hard-working lawyer, the anxious and care-worn merchant, the dyspeptic alderman, the gouty peer, the shattered man about town, all would hail with joy a book that discoursed about “The Renewal of Life,” and all would naturally seek out the doctor who, having written such a book, would certainly, in their minds, be able to carry out his principles, and work upon their frames that blessed renovation.

The book is divided into twenty-nine chapters, of which we shall now proceed to give a short analysis. The first treats of “Theories of Medicine at the Bedside;” of these the author says there are five, which he enumerates as follows:—ALLOPATHY,

HOMEOPATHY, EVACUATION, COUNTER-IRRITATION, and STIMULATION, to which is added, at the end of the chapter, his own special theory, RESTORATIVE MEDICINE. After giving an account of the first five theories, he adds, "in fine, all confess, either by words or deeds, that a true guiding principle, a single aim, in the treatment of disease, is wanting." . . . "It is no use to mince the matter, the root of the whole principle is unsound." We hardly know how to deal with such expressions and assertions. Who are the allopaths? If Dr. Chambers means such men as Graves, Todd, Watson, or Stokes, he is decidedly wrong, and what is more, grossly ignorant of their views and practice. Allopathy was a nick-name given by the homeopaths to the followers of rational medicine, and not one which they assumed themselves; and Dr. Chambers ought to know, that we are not guided in our practice by the "simple and very plausible idea, that the important point in all diseases is a motive cause affecting the body with a certain derangement, and it suggests that the best mode of combating that, is to give remedies whose nature is to affect the body with an opposite derangement. Thus a balance is struck between disease and remedy. If there be constipation, drugs are to be given, which, to a healthy person, would cause diarrhea; if the urine be scanty, those which normally augment it beyond the average standard. . . . In short, all states of excess are to be cured by the opposite excess; the disorder is to be *neutralized* by the temporary presence of a contrary disorder." All this is simply untrue; but Dr. Chambers required an excuse for putting forward his own RESTORATIVE doctrine, and this excuse he makes for himself, by concocting a mass of rubbish and calling it "Theories of Medicine at the Bedside." We shall now endeavour to analyze for our readers this new doctrine of the author.

Having devoted the second chapter to the consideration of DEATH, LIFE, DISEASE, and CURE—in which the student will find many truths, which he will equally meet in other works on the practice of medicine—Dr. Chambers plunges boldly into "Continued Low Fever," and, after switching the allopaths, brings himself prominently forward thus:—"Here then we bring our doctrine of RESTORATIVE MEDICINE (the capital letters are Dr. Chambers') to its touch-stone—bedside application. The Restoratist asks himself what vitalities are wanting, and where?—and how shall I easiest supply them?" Read two and a-half pages more, anxious student, and you will find the answer to be—sour buttermilk and

leeches to the right iliac fossa! The chapter on rheumatic fever is good, though blistering the painful joints would, in our mind, be a better treatment than leeching them. In pneumonia Dr. Chambers advocates bleeding—either leeches, cupping, or from the arm; and although we do not object to taking away a little blood *locally*, when it acts as an *obstacle*, yet we fear that he is too partial to detraction of blood, for at page 117 we read, “I have called the local detraction of blood a renewal of life;” and at page 171, “You need not be afraid of a small loss of blood in low fever;” though we must do him justice by saying, that whenever he does detract blood he does not follow it up by low diet, but, on the contrary, always supports the system.

The fourteenth chapter treats of Thoracic Aneurisms, and here again his partiality for blood-letting is apparent. “The treatment which is adopted is a strict following of that which nature adopts in all aneurisms that heal spontaneously. In them you find a fibrinous clot formed, and the sac shrunk up from lack of a stream passing through it. We have endeavoured to make the blood disposed to form fibrinous clots, by bringing it into that fibrinous state, which loss of blood, anemia, and low diet induce; and we have endeavoured to keep the blood-stream as calm as possible by rest in the horizontal posture.” . . . . “I like, in general, to bleed the patients from time to time.” . . . . “I kept a stone-mason in this hospital under the bleeding and starving treatment for five weeks.” . . . . “Bleeding and starving, it is urged, induce debility and anemia; that is to say, in physiological language, they lower the force of the heart, and they cause a comparative excess of fibrin over blood-discs in the blood. These are both steps towards the mode adopted in nature to effect a cure of aneurism, and perhaps of some other diseases also. So I contend not merely is it the best mode, but the only honest mode of treating aneurism of the trunk-vessels; because it is the only one we at present know consonant to reason and experience.” How such treatment can, by any stretch of fancy, be called restorative we can not possibly make out; but surely the author does not mean to tell us that it is new, and originates with himself? It is simply old Valsalva's plan, practised so long as a hundred and fifty years ago; and in lecturing to his class Dr. Chambers should not have allowed the opportunity to slip of giving credit to the learned Italian physician, who, in those days of medical infancy, did so much for the advancement of real science. But even the aid of the alkaline treatment which our author recommends at

p. 225 (3 drachms daily of liquor potassæ) is not new; Sir Astley Cooper employed it—and in his lectures cautions the reader against the protracted use of it, on account of its producing petechiæ.

The seventeenth chapter treats of Hysteria; and from it we learn what we certainly never knew before—that the air of Rome has a remarkable tendency to the production of it; and we find at page 256 the following wholesome advice:—"Be careful, therefore, that your hysterical patients keep clear of the Eternal City." The treatment recommended consists in "moving the limbs to time, at first slowly, and afterwards more rapidly, till at last the culminating point of dancing can be arrived at. This is the perfection of the cure." We shall insert one more extract, and then put by our pen, for we have already exceeded our limits. At page 361, when treating of diarrhea, Dr. Chambers speaks as follows:—"In the case of babies, the whole abdomen and loins may be fastened up in a large circumambient poultice, which they cannot wriggle away from; one or two leeches put on near the navel, and the bites allowed to bleed for some time." *One or two leeches applied to a baby's abdomen and then allowed to bleed into a huge poultice!* We fear our readers will scarcely believe us, but it is the fact; they will find it written at p. 361; and surely a safer passport to the regions of bliss could not have been devised for any baby!

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*Recherches d'Anatomie et de Physiologie Expérimentale, sur les voies Lacrymales. Par le DOCTEUR FOLTZ, Professeur d'Anatomie, et de Physiologie à l'Ecole de Médecine de Lyon.*

*Recherches sur l'Anatomie, et la Physiologie de la Conjonctive. Par le PROFESSEUR W. KRAUSE.*

THE first of these papers treats of the anatomy and physiology (based on experiments) of the lachrymal canals in man and other mammals, and consists of three parts; one on the anatomy of the lachrymal canals; one on the physiology of the canals; and one giving a historical and critical review of the various theories that have been broached on the subject of the course of the tears. We purpose to give a brief epitome of each of these.

Dr. Foltz first examines the lachrymal canals in man, dividing them naturally, into two parts, very different both as to their

structure and the mechanism of their functions—the lachrymal canals and the lachrymo-nasal canal.

The first question of importance to determine is, whether the lachrymal canals are *open* or not; the majority of anatomists compare them to capillary tubes, and in consequence regard them as both cylindrical and open; but in opposition to this Béraud<sup>a</sup> says that they are closed in the same manner as the œsophagus is; and Dr. Foltz himself, in a paper published in the *Medical Gazette of Lyons*, in 1860, also participated in this view; more recent observations have, however, convinced him that they are neither cylindrical nor shut, but that they are of an oval form and open.

In the first part of the canal, and about a millimètre and a-half from the punctum lacrymale, the canal, from having been a little enlarged, presents a very remarkable semicircular contraction, which is a true valve, the free edge of which is turned towards the lachrymal sac; in the second part there are sometimes found a few slight folds, and some very minute *culs-de-sac*; in a few rare cases these folds have been found large enough to form valves, in all respects resembling those of the lymphatic system; in the third portion there is nothing very remarkable to record, unless that the valve of Huschke appears to be constantly present, though rather various in form.

Of the two valves in the lachrymo-nasal canal, the inferior valve appears to be the more complete and the more constant, although very often wanting—according to Béraud three or four times in a hundred, and according to Sabatier and Foltz even as often as eighteen times in a hundred.

We shall pass over very briefly the account of the lachrymal canals as found in the horse, the rabbit, and the hare—not from any want of appreciation of their interest, but fearful lest we should tire the reader by dilating too much on the comparative anatomy of these little passages. It may be well, perhaps, to state that, in the horse only one of the three portions found in the canaliculi lacrymales of man exists; and this corresponds to the middle portion in man; while in the rabbit and hare there is but one lachrymal canal and punctum for each eye (two puncta have been found on one papilla of the human eye), the punctum of which is found on the border of the inferior eyelid; the canal is of large calibre, and there can be no doubt as to its orifice being constantly patent.

Dr. Foltz next proceeds to detail the results of his experiments, of which the following are the most remarkable:—On a sufficiently

<sup>a</sup> Velpeau and Béraud, *Manuel d'Anat. Chirurgicale*. 1862, p. 106.

large rabbit, Dr. Foltz made a lachrymal fistula by cutting out, with a scissors, a small portion of the skin of the orbicularis, and of the external walls of the canal; nothing was easier than to be certain as to the openness of the very large canal; a drop of water, coloured by indigo, was placed between the eyelids, absorption took place rapidly, and the blue colour appeared in the fistula. When the animal winked its eyelids the liquid in the canal was ejected from the fistula; when the winking ceased, and the eyelids were averted, the liquid re-entered, by a true suction, through the fistulous opening; during many days the animal was watched, and the same results were obtained; different substances were tried—among them ink, this considerably increased the secretion of the tears, which were immediately absorbed, and appeared of a black colour at the fistula. A glass tube was then fitted to the fistula, and during each contraction of the eyelids the liquid passed through the tube, coming back again during their relaxation. This remarkable escape of the liquid through the fistula was produced solely by the contraction of the upper and lower eyelids, but it took place much more energetically during the winking of the nictitating membrane.

From these experiments it is evident that during the winking of the eyelids, and especially during that of the third eyelid, the lachrymal canal is compressed, and expels onwards the fluid which it contains; and that when the eyelids open to return to their normal position, the canals recover their capacity, and take in the tears through their puncta. Dr. Foltz had started with an idea the very reverse of this, fancying that it was the winking that dilated the passages, and the opening of the eyelids that compressed them. These experiments obliged him, however, to recognise, on the contrary, that there is a kind of forcing-pump movement during the winking of the lids, and that of a suction-pump during their relaxation. This theory of the course of the tears having been determined by these and some additional experiments, it remained to be found out how much is due, in the compression of the lachrymal canals, to the action of each eyelid, or rather to the muscles which move them; these muscles being for the eyelids, properly so called, the orbicularis, and for the nictitating membrane, the retractor muscle; the former being supplied by the facial nerve, and the latter by a branch from the sixth.<sup>a</sup> To do this it was

<sup>a</sup> This membrane is commonly supposed to be supplied by a branch of the third nerve, but the experimental physiologist, Chauveau, has determined its supply as here given.

necessary, first, to cut these nerves, and to observe the effect of their destruction on the mechanism of the lachrymal canals, and on the other hand, to excite them by means of galvanism, and likewise to note down its effects.

We have not room to give these experiments in detail; Dr. Foltz was assisted in them by Professor Chauveau, but the conclusions are too interesting to be omitted. In a rabbit the facial was cut, and it was found that the orbicularis contributed but very feebly in assisting the onward progress of the tears; but in another rabbit the sixth was cut across, and it was proved that the nictitating membrane plays the principal part in the mechanism of their progression; lastly, both nerves were cut across, and there then followed a complete paralysis of the three eyelids, so that coloured liquids placed between the lids remained stationary on the lower one; a fistula was then established, but the blue coloured liquid did not arrive at the fistula, although the punctum lacrymale and the canal remained open, and on the next day both fistula and canal were thoroughly dry, not a drop of liquid having passed, showing clearly enough that the tears do not escape into the nasal sac by means of capillary attraction.

The following are the final conclusions of the author:—1st. That in mammals like the rabbit and horse, the lachrymal canals are the seat of two passive movements, the one a systole, the other a diastole, coinciding exactly, the first with palpebral winking, the second with the opening of the eyelids. 2nd. That the systole consists of a lateral flattening of the sides of the canal, which goes on until its calibre is completely obliterated. 3rd. That two muscles contribute to this movement—the orbicularis, which directly compresses the external wall of the canal, and the retractor muscle, a portion of which compresses the internal wall. 4th. That the retractor muscle of the eye, supplied by the sixth nerve, has a much more energetic action on the lachrymal canals than the orbicularis, which is supplied by the facial. 5th. That during the palpebral winking and the systole of the canal, the orifice of the punctum lacrymale is shut by a peculiar valvular mechanism, the anterior and posterior edges of the slit approach close to each other, and the internal and external walls apply themselves the one to the other, so that the tears compressed in the canal, and not able to get out through the punctum, must issue out into the nasal sac. 6th. The diastole restores the canals to their normal open condition, in virtue of their peculiar elasticity, and of the return of the organs to their

wonted position. 7th. During the diastole the punctum lacrymale opens, the tears assembled in the lake are sucked into the canal. It may be asked why, in animals which have no valve at the end of the lachrymo-nasal canal, the tears do not flow back again into the canal? There are many reasons why they cannot, such as the great length of the canal, its being surrounded by bone during part of its course, and its structure being submucous towards its termination allows its walls to yield as a valve; but the principal obstacle is the peculiar action of Harder's gland, which ceases not to compress the whole canal. When it, *i. e.*, Harder's gland, is withdrawn to take its place in the interior part of the orbit, it quickly withdraws from pressing upon the punctum lacrymale, and then it gradually ceases to compress the rest of the canal; the part close to the punctum ceases, in the first instance, from being compressed, and sucks in the tears before the compression has been removed from the point of exit. In a strong rabbit, in which the external wall of the canal had been removed, one could follow with the eye the movement of the gland as it pressed upon the interior wall. 8th. Once the tears have arrived in the lachrymo-nasal canal, they run out in virtue of a force, *vis-à-tergo*, in addition to the force of gravity, and perhaps even that of respiration.

It only remains now to see how these facts, ascertained by experiment, are applicable to man.

It is evident, that in man, as in the other mammals, the lachrymal canals are the seat of two passive movements; one, a systole, coinciding with the winking of the eyelids; the other, a diastole, coinciding with the opening of the lids.

The systole consists of an antero-posterior approximation of the canals, attended by a slight shortening, and a lateral inflexion. This is produced by the orbicularis and Horner's muscle, which form two planes of contraction between which the canals find themselves compressed in the instant of winking.

The diastole results, in man as in the other mammals, from the elasticity of the canals, and the restoration of the organs to their wonted position.

During the palpebral systole the punctum lacrymale is closed. It is easy to ascertain, by the assistance of a good lens, that its orifice, in other respects a very narrow one, closes itself by a flattening from without and within. Moreover, Dr. Foltz has pointed out, in the first part of the canal, a millimètre and a-half from

the punctum, the existence of a valve, which assists in narrowing the tube, and which opposes the reflux of the tears, during the compression of the canal. This valve, though insufficient during the diastole of the canal, is quite sufficient during the systole which contracts it; hence, it follows, that the tears compressed in the canals, get heaped up against the valve and its *cul-de-sac*, and so, not obtaining any exit on that side, are projected into the lachrymal sac.

During the diastole the punctum lacrymale opens itself, and lets the tears pass in; it is to be recollected that the valve of Huschke hinders the tears from getting from the sac back into the canal.

The lachrymal canals in man, thus furnished with two valves, the one at their entrance, the other at their exit, are infinitely better organized, than those of other animals, to play the part of a forcing and suction-pump.

The question, therefore, of whether the sac is *compressed* or *dilated* during the palpebral winking, and on which so much has been written, in support of preconceived ideas, is a question of but second-rate importance. We have seen that the rabbit wants this sac; that in the horse it is fully developed, and very slightly compressed, although the canals are very strongly so. Hence, by analogy, we may conclude, that in man the sac is submitted to a slight compression during the winking of the eyelids; but the important fact is, the systole of the canals themselves, once the tears get into the sac, they run along through the lacrymo-nasal canal, partly by the *vis-à-tergo*, and partly by gravitation. It may be added, that the act of suction is not, perhaps, entirely absent in the sac and nasal canal, for it happens with many persons that a strong inspiration—the mouth and the nose being held shut—depresses the sac, while a strong expiration, under the same conditions, makes it pout out. This effect of respiration, which does not exist in every person, can only affect the tears in the lacrymo-nasal canal, and not those in the lachrymal canals.

So far for the first and second portions of Dr. Foltz's paper. In the third he proceeds to enumerate in detail the different theories that, from time to time, have been started on this subject. The author remarks, justly enough, that none of them have been founded on experiment, but are simply the result of anatomical or pathological inductions. Commencing with Petit (1726?) who compared the lachrymal canals to a syphon, of which the short branch is represented by the lachrymal canals, and the long by the sac and

nasal canal; as a syphon, however, must be charged, Petit thought that the contraction of the eyelids, in compressing the tears in the sac, compelled them to enter into the lachrymal canals. This ingenious theory of the syphon would not, however, do; it condemned the most dependent of the eyes, when their possessor was lying on his side, to weep; and although there was obstruction of the nasal canal, still the sac filled with tears; and, lastly, the syphon theory did not explain the movements of systole and diastole.

Haller (1763), Molinelli and Magendie (1833), believed that the tears penetrated the canals by means of capillary attraction.

Some ten years later Haller held somewhat the same opinion as Richerand (1802), that the tears were sucked in by an action *vitale particulière*.

We pass by the opinion of Weber, Hasner, Janin, in order to allude to the opinions of Hyrtl and Arlt. The first bases his theories on the *dilatation* of the sac; while Arlt's theory is founded on its *compression*. Hyrtl in his *Topographical Anatomy*, first published in 1847, compares the action of the lachrymal canals to that of a suction-pump, each winking being, as it were, the stroke of the piston.

Arlt, presuming that the lachrymal passages are always filled with tears, says—suppose that at the moment of the shutting of the eyelids, the sac and lachrymal canals are somewhat compressed by the swelling out of the contracted fibres of the orbicularis, and by the traction which at the same time Horner's muscle exerts from behind; then the walls of the sac are so resisting, and its contents so incompressible, that only a certain portion of these can be pressed out, and these will naturally go by the way which offers either no obstacle, or else offers obstacles relatively much less than the other; this latter condition is found to exist on that side of the nasal canal in which the tears pass, and from which they tumble drop by drop into the nasal fossa. At the moment when the eyelids open themselves the compression of the nasal sac immediately ceases; this cavity assumes its ordinary dimensions, and the tears of the lachrymal sac will necessarily penetrate into the space left empty.

The principal argument used by Arlt to sustain this theory, is derived from an examination of lachrymal fistulæ; he has remarked, that the liquid which may be seen at the orifice of a fistula leaves it at the moment of the eyes winking, and comes back again when they re-open; hence he has presumed that the compression of the sac was due to the palpebral winking.

Many objections have been raised against this theory; among others, in conformity with it, it is necessary to believe that the sac and canal should be *completely* filled with liquid, for if it were not so, then, when the compression of the sac would cease, the tears would not fail to flow all back again. M. Sabatier asserts too that this complete fulness of the canals is by no means generally the case, but, on the contrary, they are often not more than half full. Another objection is based on the necessity of a valve at the inferior end of the canal, though the presence of this is by no means constant; and another still graver objection is, how is it possible to understand why, with a large artificial opening into the sac, all epiphora should cease, when it is then it really ought to be produced.

It has been already seen how, that by substituting the compression of the lachrymal canals for that of the lachrymal sac, all these difficulties are not only completely got over, but that, in addition, the facts acquired by a knowledge of pathology or anatomy will then be in accord with those derived from experiment.

We can recommend the perusal of this paper by Dr. Foltz to the reader; the foregoing very short notice is but a very brief outline, indeed, of some twenty pages of interesting details. We have endeavoured to allow the author to speak for himself in the epitome of his paper given, and have refrained from drawing therefrom any inferences. We cannot, however, be sufficiently thankful to the experimental physiologists who help thus to place on a more sure basis the functions of organized beings

The next paper is one on the anatomy and physiology of the conjunctiva, by Professor W. Krause; it was written for a work by Dr. Welcker (*Etudes Ophthalmologiques*), of which the first portion has appeared, and it thus reminds us that some very interesting contributions to the anatomy and physiology of the eye have lately made their appearance in connexion with works on eye surgery; such as Ch. Robin's chapter on the pathological anatomy of cataract, in *Dr. Desmarres' Diseases of the Eye*; and the epitomized chapter on phosphène, by Dr. Serre D'Uzes, in *Warlomont and Testelin's Translation of Mackenzie*, and others.

The author calls attention to the conjunctiva as consisting of two several portions; one the mucous layer, composed of epithelium, the other the papillary layer which is connected to the deeper layers of the globe; the connexion varying in different parts of the eye; it is

formed of a uniform layer of compact cellular tissue, which, on the lid near the eyelashes, presents the appearance of very small, scarcely visible, papillæ; towards the posterior portion of the tarsal cartilage, they become more prominent, and are found in the form of tongue-shaped projections; in the conjunctiva of the *cul-de-sac* they have a larger base, but are less elevated; these papillæ are formed of a cellular tissue, with very solid nuclei; they are well supplied with blood vessels, but it is uncertain whether they possess lymphatic vessels; their size varies according to the age of the individual, and according to the different parts of the conjunctiva in which they are found; lymphatic vessels are very common in the conjunctiva of the bulb, and at the border of the cornea they form a net-work with close meshes, a full description of which is given.

Lymphatic glands are also found in the conjunctiva, immediately beneath the mucous surface; they are scattered here and there in the mucous membrane of the *cul-de-sac*, also in the inner half of both eyelids; their number is very variable, sometimes not one is to be found: they resemble in every respect the solitary glands in the intestines, being, like them, in communication with lymphatic vessels.

The nerves of the conjunctiva are said to terminate, not by losing themselves in the tissue, but in club-shaped corpuscles, such as have been observed in the tongue, lips, clitoris, and glans penis, and which bear some resemblance to the middle portion of a Pacinian corpuscle.

The aggregated glands are principally found in the upper *cul-de-sac*; ordinarily there are twelve to eighteen (once forty-two were seen) in the upper *cul-de-sac*, while there are not more than two to six in the lower; each gland or cluster of glands has its own duct; these glands were discovered in 1842, by M. C. Krause; Dr. W. Krause thinks that they do not secrete mucous, but tears, and this on account of their nearness to, and anatomical accordance with, the lobules of the lachrymal gland itself.

The watery fluid which accumulates in the cavity of the sac of the conjunctiva is composed of the product of the secretion of the lachrymal gland, of the secretion of these glands, as well as that of the vessels of the conjunctiva and cornea, and is mixed up with the detritus of the epithelium lining these membranes.

The secretion of the Meibomian glands appears to have no other office than to lubricate the eyelashes, and to prevent the tears from running over on the cheeks; it is composed altogether of fat.

The tears, which comprise as well the secretions of the conjunctiva,

form a clear colourless liquid of a saltish taste, containing according to Frerichs:—

	I.	II.
Water, . . . . .	99·06	98·70
Solid Matter, . . . . .	0·94	1·30
	<hr/>	<hr/>
	100·00	100·00
Solid Matter:—		
Epithelium, . . . . .	0·14	0·32
Albumen, . . . . .	0·08	0·10
Chloride of sodium, alkaline phosphates, earthy phosphates, fat and extractive matter, .	0·72	0·88
	<hr/>	<hr/>
	0·94	1·30

The first analysis was made on tears which had been obtained from a healthy eye by irritating it with an electro-magnetical machine; the second, on tears from an eye affected with chronic ophthalmia.

As the epithelial cells become decomposed on the surface of the conjunctiva, they form a viscid fluid, mixed with little grains of amorphous matter which contains (in part only) a little fat, and which has been, and is often, called the mucous secretion of the conjunctiva; this collects in the corners of the eye, and has often a frothy appearance.

The researches of MM. Martini and Frerichs, as well as the surgical observations of Textor, Bernard, and others, prove that the lachrymal gland is not the sole source of the quantity of the fluid which flows over the eye; for though after extirpation of the lachrymal gland the quantity of the fluid is much diminished, yet the eye can keep its brilliancy and preserve a certain degree of humidity.

This paper is illustrated by a plate representing the termination of the nerves in the claviform corpuscles, and of the papillæ which project up into the epithelial layer of the conjunctiva.

## PART III.

### MEDICAL MISCELLANY.

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*Reports, Retrospects, and Scientific Intelligence.*

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#### PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.<sup>a</sup>

TWENTY-FIFTH ANNUAL SESSION, 1862-63.

MR. HAMILTON, President.

*Diphtheria.*—DR. EDWARD HAMILTON exhibited the larynx of a female about seventeen years of age. She was admitted into Steevens' Hospital on Sunday evening last, and he saw, during his ordinary visit on the following day, she was suffering from all the symptoms of sore throat in its most aggravated form; there were great swelling, difficulty in swallowing, and tenderness on pressure outside. The lower part of the uvula had a black appearance; the tonsils were enlarged, and covered with a slough, which extended posteriorly for some distance. There was no evidence of laryngeal distress, and her breathing was tranquil. The usual remedies were employed, and she appeared to improve somewhat under the treatment, and the difficulty in swallowing seemed to subside. Up to this time there was no laryngeal distress, but on Tuesday there were uneasiness and signs of anxiety; she passed a restless night, and on Wednesday morning there were signs of laryngeal inflammation beyond all doubt, her breathing was more or less affected, and her lips blue. A consultation was then held upon the case, and it was determined to perform tracheotomy, which was accordingly done at once.

The laryngeal symptoms were much relieved by the operation, and the pulse increased in force. Things went on in this way for a few hours, but, the pulse failing, she died at 12 o'clock, eight hours after the operation.

The *post-mortem* examination showed the epiglottis covered with a tough yellow exudation, extending through the larynx, covering the

<sup>a</sup> These reports are furnished by Dr. R. W. Smith, Secretary to the Society.

chordæ vocales (although there was no loss of voice), and extending for a considerable way into the trachea, at one point presenting the appearance of slough described by Empis, resulting from chemical change in the exudation; but on raising this the mucous membrane was seen to be quite sound.—*November 29, 1862.*

*Hypertrophy of the Heart—Adherent Pericardium.* DR. BANKS detailed the following case:—

A boy aged 18 was admitted into the Hardwicke Hospital complaining of pain, of extreme severity, in the back. He stated that two years previously he had rheumatic fever, and that he was told his heart was affected. His health, however, was good, and he did not seem to have suffered any inconvenience from palpitation or shortness of breath, as he was capable of very active exertion and hard work.

He had recently come from the country, and for some time had failed to obtain employment, being subject during this period to much privation.

At length he succeeded in procuring a place, but he was obliged to work in a cellar, and he soon got cold from wet feet.

Before he was received into hospital he had been some days ill, but when scarcely able to leave his bed he was compelled to perform his arduous duties.

On the first day he came into hospital he exhibited febrile symptoms, and complained of excruciating pain along the spine. On the following day there was slight swelling of the knee joints.

The next morning (the third day of his residence in the hospital) his countenance was indicative of great distress, and he referred all his pain and anguish to the region of the heart, over which he could not endure even the slightest pressure. The heart's action was tumultuous, and the impulse was visible over an extraordinary extent.

The whole precordial region was dull, a loud murmur was audible at the apex; there was remarkable throbbing of the carotids. The pulse was full and perfectly regular, but rose in frequency for the three days he lived after the supervention of the cardiac symptoms, until shortly before his death, when it fell from 130 to 70; death was sudden.

A *post-mortem* examination revealed the following morbid condition of the heart:—

Enormous enlargement, its weight being 2 lbs. 6 ozs. The pericardium universally and closely adherent to the heart's surface; much of the uniting material (lymph originally) was found converted into fatty matter.

Whilst all parts of the heart were enlarged, the immense size the organ had attained was chiefly due to hypertrophy and dilatation of the left ventricle; this cavity was of a circular form, having a transverse diameter of at least five inches; and its walls, in parts, were nearly two

inches in thickness. The right ventricle, though dwarfed and small as compared with the left, was, in point of fact, much larger than natural, and its walls thicker.

The sigmoid valves of the aorta were found permanently patent; this was owing to dilatation of the orifice of the vessel, for the valves themselves were larger than the normal size, and were greatly thickened, yet they were insufficient, for water flowed freely from the aorta into the ventricle.

The mitral valve presented a similar appearance; the curtains were increased in size, and much thickened; on the anterior flap a granular appearance, due to recent deposit of lymph, was recognisable, with patches of well marked vascularity, unaffected by frequent washing.

The chordæ tendineæ were greatly hypertrophied, and the left auriculo-ventricular opening was dilated. The auricles were more capacious than natural, and fibrinous coagula occupied both right and left cavities, extending on the right side into the superior vena cava, and on the left into the aorta; the latter presented an accurate cast of the aortic valves.

Lastly, the heart's substance was undergoing fatty transformation, from without inwards.

In some places, as near the apex of the left ventricle, this fatty conversion extended very deeply into the muscular tissue; at the same time there were no evidences, on microscopic examination, of true fatty degeneration of the muscular fibre.—*December 6, 1862.*

*Aneurism of the Aorta.*—MR. SYMES exhibited the heart, lungs, and aorta, taken from the body of a constable, who died suddenly in the Phenix Park. On examination after death, the left pleural cavity was found to be filled with blood. Atheromatous deposits had occurred in many parts of the aorta, and there was also a large aneurism springing from the inferior wall of the transverse portion of the arch; it was imbedded in the substance of the left lung. The rent, through which the fatal hemorrhage had taken place, was in the left wall of the tumour; through this the blood passed into the substance of the lung, and making its way to the anterior aspect of the organ, burst through the pulmonary pleura, into the serous cavity.

Though this man had been under treatment, in the country, for debility, the existence of the aneurism had not been ascertained during life, owing, no doubt, to its being surrounded by pulmonary structure, a circumstance calculated to render the diagnosis extremely difficult. The case was worthy of attention from the peculiar situation of the tumour.—*December 6, 1862.*

*Fracture of the Humerus.*—MR. SMYLY, sen., presented a specimen of comminuted fracture of the anatomical neck of the left humerus.

The case was that of a man aged 70 years, a slater, who fell from the top of a house three stories high, along with the ladder on which he was standing. There was no parapet to the house; the ladder, on which the patient was working, was secured to another which hung upon the roof at the other side; unfortunately the rope was rotten, and gave way, and the old man was precipitated to the ground, and fell upon his left side. He was immediately brought to the Meath Hospital; and, as it was supposed that the shoulder was dislocated, Mr. S. was sent for, and found that the humerus was fractured close to the shoulder joint; that the left upper eyelid was split, and the left knee was contused, and the skin abraded. The man was perfectly conscious; on the fourth day he had an attack of erysipelas of the face, commencing at the wound in the eyelid. On the fourteenth day typhoid fever supervened, with pneumonia, and the patient died on the eighteenth day after the accident, of pyemia.—*December 6, 1862.*

*Disease of the Prostate Gland.*—DR. BARTON exhibited the bladder, prostate, and urethra, taken from the body of a man, about 65 years of age, who died in the Adelaide Hospital some time before. The prostate was the size of a small orange, its central portion projecting an inch into the bladder; it presented the usual hard, fibrous feel of chronic enlargement. The effects of the chronic enlargement of the prostate were remarkably exemplified by this specimen.

1st. The bladder was small, its mucous membrane of a dark green colour, its walls very much hypertrophied, the muscular bands presenting the appearance of the carneæ columnæ of the heart.

2nd. The ureters were dilated to about four times the natural calibre.

3rd. The kidneys presented an amount of disease which was undoubtedly the immediate cause of death. Their cortical substance was filled by small purulent deposits, while the lining membrane of the pelvis and calices was of a dark red colour. All these changes followed upon the obstruction at the neck of the bladder, caused by the enlarged prostate.

The symptoms were those invariably present in such cases. For some weeks before the death of the patient, he was obliged to have the catheter passed every four or five hours. For three days previous to his death, he became heavy and drowsy, and finally comatose for 12 hours before death. The state of the kidneys explained this.

A remarkably large sacculus existed to the left side of the bladder, capable of holding a billiard ball, and communicating with the bladder by a narrow neck, the mucous membrane of the sacculus and of the bladder being evidently continuous.

It had been said that such a condition might be diagnosed by a quantity of pus and mucous *following* the discharge of the urine contained in the bladder. The symptom certainly was present in this case; but Dr.

Barton had supposed the mucous which was expelled after the flow of urine, came from the *bas-fond* of the bladder.—December 13, 1862.

*Hematocoele of the Tunica Vaginalis*.—PROFESSOR R. W. SMITH exhibited a specimen of this disease, which had been removed on the 26th of last month. The patient, who was about 45 years of age, and of a pale unhealthy aspect, was admitted into the Richmond Hospital on November 20th, under the care of Dr. Hutton, with a very large tumour, occupying the right side of the scrotum. He stated that, about three years ago, he was on the top of a load of hay, jumping on it, on his knees, in order to press it down, and that while doing so he hurt his right testicle, but not so severely as to cause him much annoyance. Three months subsequently, however, his attention was attracted by a tumour occupying the right side of the testicle; it was not attended by pain, but slowly and steadily increased until the last year, when its growth became much more rapid, and when the man was admitted the tumour was as large as a cocoa-nut. Within two months previous to his admission it had been tapped three times; between the first and second tapping there was only an interval of four days; the operation was performed, for the third time, ten days before his admission into the hospital; upon each occasion a large quantity of a grumous, bloody fluid was evacuated, but (and it is a circumstance worthy of note) without producing a corresponding diminution in the size of the tumour.

When he was admitted, the tumour (as already mentioned) was as large as a cocoa-nut; in form it somewhat resembled a hydrocele, but was more globular; it was very heavy, and had a feeling of elastic solidity; the scrotum was tense and red, but there were not many veins to be seen upon its surface; the tumour was everywhere perfectly opaque; the cord was healthy; and there was no glandular disease; the testis could not be felt. Considerable doubts were entertained as to the exact nature of the tumour, for, although its mode of origin and the result of tapping pointed to hematocoele, there were other circumstances calculated to excite the suspicion of its being a malignant growth; for instance, the great weight of the tumour, its firmness and solidity, its elastic feel, the impossibility of distinguishing the testicle, and the very unhealthy aspect of the patient. Professor Smith observed, that although he inclined to the opinion that the case was one of hematocoele, yet he had fully concurred in the propriety of performing castration. The operation was done by Dr. Hutton, and the patient made a rapid recovery, without the occurrence of any untoward symptom.

Upon making a longitudinal section of the tumour, the tunica vaginalis was found to be greatly diseased, immensely thickened, and possessing the firmness of cartilage; it varied from a quarter to half an inch in thickness; its interior contained masses of coagulated blood and a thick

grumous fluid composed seemingly of purulent matter and decomposed blood. The testis was completely atrophied.—*December 13, 1862.*

*Tubercular Peritonitis.*—DR. MAPOTHER brought forward a case of tubercular peritonitis. The patient, a female, 23 years of age, had been for many months under the observation of Dr. O'Ferrall, and suffered all through that period from considerable pain in the abdomen. Vomiting was the most marked symptom. Some time before her death the intensity of the pain increased, the abdomen became tympanitic, and the vomiting, which had been previously of a bilious character, became like feculent matter, and she sank quietly in about five days afterwards. On making a *post-mortem* examination, it was found difficult to remove the viscera of the abdomen, as they were agglutinated by lymph. The very small cavity which remained was filled with feculent matter, similar to what she vomited. It was also difficult to remove the liver, in consequence of the adhesions to the diaphragm. The stomach presented a healthy aspect internally, but externally was most firmly glued to the liver, omentum, and abdominal parietes. This condition may account for the constant vomiting, as the organ could not contract on its contents, yet they might be ejected by the pressure of the abdominal muscles. In the last four feet of the ileum six perforations were found, presenting ragged surfaces towards the mucous membrane, and smaller openings in the peritoneum. There were four or five tubercular masses in each ovary, and a very limited deposition in the apex of the left lung.—*December 13, 1862.*

*Cystic Disease of the Testicle.*—DR. J. S. HUGHES said:—The recent specimen which I have to submit to the notice of the society consists of an enormously large and diseased testicle, which I removed from a patient, aged 24, on the 15th of last month, in Jervis-street Hospital.

The history of the case was as follows:—In August, 1861, whilst serving in the Military Train, the patient was thrown on the pommel of his saddle, on his right testicle, which at once became painful and swollen. The pain soon subsided, but the swelling continued to increase until the date of his discharge from the service in November of the same year.

In May last the swelling sensibly increased, but he was able to work as a railway porter, suffering little inconvenience, except from the size of the tumour, until, in play, he received a kick in the diseased organ from a fellow-workman, after which it became painful and more enlarged; and in the latter end of September the scrotum gave way at the precise spot which had been struck.

He was admitted into Jervis-street Hospital on the 6th of last month. The testicle was of great size, and heavy; it measured in the vertical diameter eight inches, in the transverse nine and a-half inches; it was

of stony hardness in some places, in others tense and elastic, and yielded an indistinct sensation of fluctuation. A large slough, which emitted a fetid odour, occupied the anterior inferior aspect of the tumour. There was no pain complained of, nor was there any disease of the spermatic cord or inguinal glands. The scrotum was of a dark livid hue, the cutaneous veins turgid and varicose, and the integuments of the penis were involved in the diseased mass; the left testicle was pushed upwards towards the left inguinal canal. The general aspect and condition of the patient seemed healthy.

The diseased organ was removed on the 15th of October, and the patient left the hospital, so far recovered, on the 10th of the present month.

A section of the testicle, after amputation, showed a congeries of innumerable cysts, varying in size from that of a small millet seed to that of a large hazel nut. Many of them were filled with a yellow serous fluid, and here and there were masses of cartilaginous material, deposited in nodules, and also bony matter. There were, besides, much of inflammatory matter and *debris* of waste cells, but the microscope did not indicate the presence of cancer cells, nor were there any spermatozoa. The diseased mass weighed five pounds, and was 22 inches in circumference.—*December 13, 1862.*

*Ulcer of the Stomach.*—DR. FOOT observed that he was indebted to the kindness of Dr. Stokes for the opportunity of exhibiting a specimen of ulcer of the stomach, which, after perforating all the coats of that viscus, eat deeply into the pancreas, and, finally, eroded a large artery of that gland, which led to a fatal hemorrhage. The patient was a woman advanced in life. She had, for a period of a month before her death, been subject to vomiting, and rejected the contents of the stomach every evening; but three days before her death she threw up a quantity of blood. She was at once carried to the Meath Hospital in a state of syncope. This occurred on Friday. On Saturday evening she had another attack of hematemesis; and at half-past one o'clock on Sunday morning blood began to pass from the intestines.

Syncope came on, from which she never recovered; she died at nine o'clock Sunday morning. On examining the body the greater part of the small intestines were found filled with blood. In the stomach were two pounds six ounces of coagula, some of which were moulded to the form of the viscus. The pancreas was closely adherent to the back part of the stomach. A well-defined ulcer, of an oval form, and deeply excavated, was found on the posterior wall of the stomach, towards the lesser curvature, and nearer to the œsophageal than to the pyloric end. The mucous membrane of the stomach itself was the only part of the body which seemed to have retained any of its natural allowance of blood; all

other parts being equally blanched and bloodless ; the orifice of the eroded artery projected from the floor of the ulcer.—*December 20, 1862.*

*Fracture of the Acetabulum.*—PROFESSOR R. W. SMITH exhibited two drawings, showing the appearance of the limb in a case of displacement of the head of the femur, resulting from fracture of the brim of the acetabulum. The patient, a man of about 40 years of age, fell from a plank, whilst carrying a weight of twenty stone, and received an injury of the hip-joint, November 22nd, 1860 ; he was at once brought to the Workhouse Infirmary of Enniscorthy, and placed under the care of Dr. O'Rourke, the medical officer of the establishment. The limb presented the appearances of a luxation of the head of the femur upon the dorsum of the ilium ; the displacement was reduced without difficulty, but shortly afterwards recurred ; it was again reduced ; and from the facility with which the head of the bone passed in and out, Dr. O'Rourke concluded there was a fracture of the brim of the acetabulum. At the expiration of eight weeks the patient left the Workhouse Infirmary, and at the end of three weeks more, was received into the County Infirmary, where (the head of the bone being again out of its place) the dislocation pulleys were employed ; he remained in the infirmary for three weeks, and then placed himself, for two months, under the care of a bone-setter, who enclosed the joint in a leather case. In the following summer he came to Dublin, and was admitted into the Richmond Hospital,

The appearances which the limb presented, were those of luxation of the head of the femur, upwards and backwards ; but a close examination showed that it was not an uncomplicated displacement. The limb was shortened to the extent of two inches, and the foot was inverted. There was a very distinct and prominent tumour on the dorsum of the ilium, of a globular form, which followed every motion imparted to the femur.

So far the case resembled one of simple luxation, but it was found that the patient had the power of everting the foot, abducting the limb, and flexing the thigh, to an extent, not observed in cases of uncomplicated luxation on the dorsum of the ilium ; these circumstances, connected with the history of the case, indicated a fracture of the brim of the acetabulum, and consequent displacement of the head of the femur, a form of injury usually productive of permanent lameness.

So long a period had elapsed since the occurrence of the accident that no attempt was made to remedy the deformity of the limb resulting from it, and the patient, after some time, returned to Enniscorthy, and instituted legal proceedings against his medical attendant, for negligence and malpraxis, but a verdict was very properly returned for the defendant. Professor Smith alluded to another case of the same nature, which he had recorded in the 12th volume of the *Dublin Medical Journal*.—*December 20, 1862.*

*Diphtheria.*—DR. STOKES observed.—I beg leave to lay before the Society the pharynx and respiratory organs of a patient who recently died in the Meath Hospital, and which strikingly exhibit the anatomical characters of diphtheria. The patient was, to all appearance, perfectly well a fortnight ago. He then began to complain of hoarseness; and after the lapse of a few days, he was seen by Dr. Robert White, who, upon examining the throat, found a thick exudation covering the tonsils and pharynx. Recognising at once the formidable nature of the disease, Dr. White sent him to the Meath Hospital. His state on admission was as follows:—There was considerable tumefaction of the neck, rather more on one side than on the other; it was not, however, œdematous, and had not the character of the swelling so often seen in cases of scarlatina, or when the circulation is obstructed by a thoracic tumour; it seemed to be a glandular swelling; there was congestion of the face and great debility; his voice was weak and hoarse. He was subject to paroxysms of dyspnea of an alarming nature, but there was never that extreme degree of stridor which calls for the interference of the surgeon; they did not continue long, and when he was roused a little and given some wine, the attack would pass off, and his breathing become quite natural; the decubitus was upon the right side. On the second day after his admission, Dr. White saw him, with me, and on that occasion I had a consultation with my colleagues, Surgeons Wharton and Porter. It was the opinion of all that the case was not one for surgical interference. The patient sunk gradually, and died in a semi-comatose condition. There had been no fetor at any period of the case.

Upon examination after death, we found the posterior half of the tongue, the tonsils, and the pharynx covered with a thick and very tenacious false membrane, of a dusky yellow colour, in one place almost black; it also invested both surfaces of the epiglottis, which was extremely rigid, and the laryngeal surface of which was thickly coated with the morbid deposition. The deposit extended through the cavity of the larynx, and down the trachea and right bronchus as far as its fourth or fifth subdivisions in the corresponding lung, the left bronchus being perfectly free from it. The mucous membrane, beneath the deposit, presented a purplish colour, and a rough, mamillated surface, looking as if portions of the false membrane had penetrated its tissue, but nowhere did it exhibit any traces of ulceration. The right lung was so heavy that portions of it sunk in water; when cut into and squeezed, a serous-looking fluid ran out in streams; it was scarcely crepitating, and in parts seemed to have been passing into solidification, but without presenting the characters of pulmonary inflammation. The left lung was comparatively healthy, and the left bronchus, as I have already stated, perfectly free from false membranes. This appears to me to be the most interesting point connected with the history of this case; for I cannot

find in that great *repertoire* of the literature of diphtheria, compiled by the Sydenham Society, any instance in which the false membrane was confined to the right bronchus and bronchial tubes of the right lung. The fact, as exemplified in this case, may, as far as it goes, be taken as an additional illustration, if such were wanting, of the greater sympathy that exists between the right lung and the larynx, than between the latter and the left lung.

The case which I have brought under the notice of the society bears upon the question of the true nature of this formidable disease. Is it a disease of exudation? or is it the result of some cause acting from without? Dr. Nicholson has examined the morbid deposit found in specimens before us, and, so far as his observations go, they tend to confirm the opinion of Bretonneau, that the disease is somewhat analogous to those affections of the skin which are now supposed to possess a vegetable character. It is found by Virchow, that in cases of simple or inflammatory croup the exudation rests, as it were, on the surface of the membrane, but that, in the disease under consideration, all through the epithelium, processes or roots of the false membrane are observed to pass through the mucous structure itself, and fix themselves in the connective tissue with the mucous membrane; and, further, that yellowish bodies resembling fungi in their microscopic character, are found under these circumstances. These appearances Dr. Nicholson conceives that he has completely verified in the specimen before us. I do not at all wish to advocate either the one or the other theoretical view of the disease, but certainly there are some circumstances connected with the case tending to the belief that it is a disease derived from some cryptogamic sporula, or contagion *ab extrâ*.

Its contagious nature, under certain circumstances, has now been well established by many admirable observations on the continent; the facts, too, dwelt on by Bretonneau, are very remarkable—that persons labouring under this disease, are subject to diphtheria of the skin; and also the circumstance that persons in the house with individuals suffering from diphtheria are liable, in the event of their skin sustaining any injury, to have the wound assume diphtheric characters. If a blister is applied to a person under such circumstances, the blistered surface is liable to take on features of diphtheria, and there are no anatomical distinctions between cutaneous and mucous diphtheria.

Another important point is, that no one who reads the memoirs of Bretonneau can doubt that the only treatment which is really useful in this disease is local treatment calculated to kill or destroy something; and that the only general treatment, calculated to be of service, is such as tends to support the patient's strength. This looks very like as if the disease was something derived *ab extrâ*, such as lichen, or a fungus. It is curious, that although this view of the German pathologists, as to the

vegetable origin of the disease, seems new, Bretonneau himself uses, in a botanical sense, the word "lichen," as expressive of the affection.

The last observation I shall make, in illustration of this theory, is, that in the present case there is but one lung and bronchus affected. If the disease were, like the secondary affections of fever, the result of a pre-existing morbid condition of the system, nothing would be more unlikely than that one bronchus should escape, while every bronchial tube on the other side should be affected. This circumstance is more in favour of the vegetable theory of this disease, than of the idea that it is merely the result of a constitutional malady.—*December 20, 1862.*

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## PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.<sup>a</sup>

TWENTY-FIFTH ANNUAL SESSION, 1862-63.

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DR. BEATTY, President.

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### ADDRESS OF THE PRESIDENT.

WE are assembled here to-night for the purpose of opening the 25th session of the Dublin Obstetrical Society, and I seize this, the first opportunity that presents, to offer my best thanks to the council of the society, in the first instance, for having selected and put my name forward, and to the members at large, who have done me the very distinguished honour of electing me president for the ensuing year.

The members of the society are aware that, at the close of the last session, an important change in its constitution was effected, and that a system that was considered to be too much of the oligarchical, was changed for one of a more democratic character. Under the late constitution the presidents, of whom there were four, and the vice-presidents, of whom there were fourteen, and the committee, of whom there were nine, were all self-elected, and were permanent—thus depriving the members at large of any voice in the selection of those who were to be the managers and directors of the proceedings of the society. It was thought by those who had the best interests of the society at heart, and who were best acquainted with the feelings of its members, and most alive to the great fact now so patent throughout the world, that communities will not be satisfied without a voice in the selection of their rulers; it was thought, I say very properly, that the time was come when the choice of the officers should be placed in the hands of the

<sup>a</sup> These reports are supplied by Dr. Geo. H. Kidd, Secretary to the Society.

members, and that they should be called upon, annually, to exercise that very important privilege and duty. Accordingly, a new code of bye-laws was drawn up by the committee, and submitted to the consideration of the society, and after several meetings, at which they were fully discussed, the code, now printed and distributed to the members, was adopted. We commence to-night under a new regime, and I have no doubt that very great benefits will result from the combined energies of all the members, who will henceforward feel that they have each, individually, an interest in upholding and forwarding the objects of this society, not only in reading and listening to papers at its meetings, but in the election of the officers who are to constitute its staff.

In future the council of the society will consist of one president, two vice-presidents, one treasurer, one secretary, and a committee of five, who will have no permanent tenure of their offices, but will be chosen annually, by ballot, at the first meeting of the session. To have been selected by my brethren to fill the chair of president, at the first election under the new system, is, I assure you, to me a source of the highest gratification and well-founded pride. Pride is a sentiment very often fostered, and built upon very unworthy foundations, and when it is so, it only subjects the individual in whom it is engendered to the contempt of his fellow men. But when, in the course of a professional life, after many years spent in very active public and private occupation, after filling professorships, and presidentships in other places, one finds the good opinion of his brethren undiminished, and their voices raised to place him in the highest position among them, he would be unworthy of the honour conferred upon him if he did not feel proud of such an exhibition of approval. The Dublin Obstetrical Society has now been in existence 24 years. It is the oldest institution of the kind in this empire. Dublin has the merit of having originated two most important and useful societies, connected with the medical profession, and set an example that has been followed by London and Edinburgh. This society is one, and the Pathological Society the other. In both these branches of scientific pursuit Dublin took the lead, and the great advantages arising from such institutions, having become manifest, our brethren in the metropolis of England and Scotland have wisely founded similar, and, I am happy to perceive, very flourishing societies. In speaking of the origin of this society, it should never be forgotten that we are indebted to the wisdom, energy, and foresight of a highly distinguished ornament of our profession for its suggestion and establishment. Dr. Evory Kennedy, then Master of the Lying-in Hospital, looking beyond the walls of the magnificent institution over which he was appointed to preside, soon perceived that, in the great advances then being made in all branches of science and human knowledge, there was a want of a centre, of a place of union, where, by a combination of the intellect and energies of the many

individuals engaged in the same pursuit, an impetus would be given to the acquirement and diffusion of information connected with our particular study. He instituted and watched over this society in its infancy, and its importance and value are best attested by the published reports of the able communications furnished at its meetings, and the way in which his example was followed in other cities. Dr. Evory Kennedy's name must therefore be ever associated with, and gratefully remembered by, the Dublin Obstetrical Society.

In November, 1844, now just eighteen years ago, I had the honour to deliver an address to this society, at the opening of its 7th session. When I look back through the years that have passed between that period and the present, I find much to excite feelings of very opposite character. Time, inexorable time, has plied his busy and fatal scythe among us, and has cut down a larger number of great and distinguished men than usually fall so close together. Crampton, Cusack, Marsh, Graves, Harrison, Williams, Rynd, Porter. All these have fallen since I last had the honour of addressing this society, and all of them have been at times assistants at our meetings. Some of them my seniors, some of them my fellow students, some of them my colleagues, all of them my friends. Deep regret and sorrow must arise in the breast of all who had the great happiness and privilege of knowing and living with such pillars of the fame of Irish medicine and surgery, whenever their honoured names are mentioned. There is one name I have omitted from the list, which I know must have suggested itself to every member of the society, and I have reserved it for special mention. You all expected the honoured name of Montgomery to appear among the list of extinguished lights. He was more particularly associated with us than the others were, and in the particular branch of medicine with which this society is concerned his loss is more seriously felt. The world at large, who only knew him as the brilliant and eloquent lecturer, the successful practitioner, and the thoughtful accomplished writer, have good reason to respect the memory of one who was a distinguished ornament to our profession, and to be proud of him who has left a monument, erected by himself during his lifetime, more lasting than bronze—his great work on the signs of pregnancy.

The members of this society, in which he held the office of one of its presidents, may recall with affectionate regard his eloquent and classical address, delivered in the year 1843, and his many valuable contributions at our meetings. But it is only those, in whose ranks I am happy to number myself, who knew him in early life, when the struggle for fame and position was before him, who can duly estimate his industry, his never-tiring assiduity, and the years of labour he bestowed on the making of his celebrated museum—for with his own hands he made it; many an hour I have spent with him in the workshop. The highest rewards in profes-

sional life naturally flowed in upon him, and he fell in the galaxy of great men whose names I had previously mentioned.

But, gentlemen of the Obstetrical Society, if we have much to regret, we have, on the other hand, much to rejoice over and be proud of. During these last years great advances have been made in our particular branch of the profession; and I think it is not going too far to assert that, notwithstanding the brilliant improvements in surgery, and the solid and wise modifications in medicine, the changes in our art have preserved more lives, and relieved more human suffering and misery. The pains of the human female in giving birth to her offspring are proverbial, and are, in many cases, the greatest that nature can endure. Formerly we stood by, watching the agony, looking with deep anxiety for its termination, but powerless to alleviate, or diminish its intensity. Thousands of years have rolled away since the primeval curse, and countless millions of women have gone through the great trial of child-birth, without any means being devised to mitigate their woe, until, within a few years, it was discovered in America that the inhalation of ether was capable of removing the consciousness of pain during labour. The use of this agent having been attended with some inconveniences, it occurred to the acute and philosophic mind of Professor Simpson that there was probably some other of the class of ethers that would equally act as an anesthetic, without producing these unpleasant effects.

He accordingly instituted a long course of experiments, with a variety of vapourizing fluids, and concluded by discovering that chloroform was the one most to be relied upon to produce anesthesia with safety. This agent was at once approved of by the profession, and came into general use to assuage pain in all surgical operations, as well as in midwifery. It is a remarkable fact that, although serious and fatal accidents have arisen during its employment in surgery, there is no instance (as far as I know) recorded of its injurious or deadly consequence when administered during labour. Any one who has witnessed the sufferings of a young creature during the many, many, hours of a first confinement, who has heard the frantic, half maniacal shriek, and seen the fearful contortions of a frame agonized beyond the power of man to comprehend, will rejoice that he has, in chloroform, a means of alleviating such misery, that will soothe the excited, frenzied mind, calm the bodily suffering, and produce such a happy feeling in the previously distracted patient, that she often gives vent to the exclamation "oh! this is heaven." Any one who has attempted to perform the operation of turning in a tightly contracted uterus, with a patient utterly unable to control her plunging or her screams of agony, and then, having got the woman under the influence of chloroform, comes again to try what can be done, will be able to appreciate the enormous value of this agent, by the facility with which he is able to go through all the steps of the operation. His hand

passes easily, the child is turned without opposition, and the patient is delivered without pain. To have in our hands such an agent, that was unknown to our predecessors, and by which such marvels are worked, is, I repeat, a good ground for our rejoicing in the present state of our knowledge and power.

Another source of rejoicing is the present state of public opinion and practice respecting the midwifery forceps. When I compare the existing practice, with what it was fifty years ago in this country, it is to me particularly a subject of congratulation and pride. At the time I allude to, for some time before it, and for many years after, including a period of fully forty years, this instrument was banished from practice through the whole of this country. The feeling was so strong against its employment, and the leaders of the outcry were so powerful, that no one dared to question the authority by which it was condemned. The perforator and crochet were the only means in use, craniotomy was the only operation. This indiscriminate adoption of the mutilating instruments was the wonder of strangers, and was the opprobrium of the Dublin school. The submission to the authority alluded to was so complete, that I am almost perfectly correct in saying "no one dared" to question it. But there was one faithful priest who had kept the sacred fire burning in spite of all attempts at its extinction and, towards the close of a most laborious professional life, had the courage to proclaim the merits of the forceps, and the success that had attended their use in his hands. This was done at a time when even to mention the name of the instrument was considered a heresy, and nothing short of excommunication could be expected by him who was rash enough to recommend its use. That individual was the late Dr. Beatty, my father; his paper was read at the association of the College of Physicians, and published in the first volume of the new series of their Transactions. That first opened the eyes of Irish practitioners, who had for so long groped along in the darkness of error; but it was not to be expected that any very rapid change would take place. To convert an entire nation, long schooled in a particular doctrine, is a work of time; but the good seed was sown—105 cases in one man's private practice was proclaimed to the world, and the reformation was begun. The author of that paper died in 1831; and, in 1842, I read before this society a paper entitled "*Cases Illustrative of the Use of the Forceps.*" There are some of the existing members who were present upon that occasion, and they will, I doubt not, recollect the feelings with which my observations were received by the then seniors of the society. One fact will suffice to show the prevalent notions respecting the forceps at that day. The chair of the society was occupied on that evening by one of the most esteemed and respected members of the profession—a gentleman who had been master of the Lying-in Hospital, and for forty years had enjoyed one of the largest

practices in this city, and on that occasion he stated, that he had *once tried* the forceps and failed. It was expected that the discussion on my paper would have been of an animated character, but the hour being late the discussion was postponed to the next meeting. I came to that, prepared to have my views canvassed, and my doctrine controverted, but there was no one to enter the lists—the opponents did not appear. Judgment was suffered to go by default. From that time a steady progress in the correct appreciation of the value of this instrument took place, additional testimony was borne by succeeding writers, amongst whom Dr. Churchill was the earliest and most powerful. The instrument assumed its legitimate position in the practice of all well-educated members of the profession, and we have lately had the gratification of hearing in this society, and afterwards of seeing in the *Dublin Medical Quarterly Journal*, a most valuable paper, by a late assistant of the Lying-in Hospital, Dr. Sinclair, “On the Timely Use of the Forceps.” The rate at which the current now runs in favour of this instrument may be judged of by referring to two papers published in the first volume of the *Transactions of the Obstetrical Society of London*, for the year 1860. I allude to that by Mr. Harper, “On the More Frequent Use of the Forceps as a Means of Lessening both Maternal and Fetal Mortality,” and also that by Dr. Tyler Smith, “On the Abolition of Craniotomy from Obstetric Practice in all Cases when the Fetus is Living and Viable.”

While speaking of the forceps, I trust the society will excuse an allusion to a subject that nearly concerns myself. In the last volume (the third) of the *Transactions of the Obstetrical Society of London*, there is a paper by Dr. Graily Hewitt, entitled “On Unusual Elongation of the Fetal Head, as a Cause of Difficulty in the Application of the Ordinary Obstetric Forceps, with Description of a Modified Form of Instrument to be Used in such Cases.” This is an admirable paper, and is accompanied with an engraving of the instrument—and a first-rate instrument it is, but is not new. No one has a better right to know the value of that instrument than I have, for it corresponds in every particular, to the most minute fraction, with my forceps, described and represented exactly twenty years ago, in the twenty-first volume of the *Dublin Medical Journal* for 1842. The measurements given by Dr. Graily Hewitt, correspond so exactly with mine that one would be disposed, at first, to think him guilty of piracy, but I entirely acquit Dr. Hewitt of any such intention. It is very likely he never read my paper or saw my engraving. If Professor Murphy had been present when Dr. G. Hewitt read his paper, and showed his instrument, he could have informed him of my priority, for he was present when my paper was read here, and has one of my instruments, and has written<sup>a</sup> strongly in its favour. I may be excused, I hope, for further stating, that I had, lately, the gratification to hear from Dr. M·Clintock,

<sup>a</sup> The last edition of his work.

the late master of the Lying-in Hospital, that the pair of forceps which I had the pleasure of presenting to him, when he was elected to the Hospital, was the only one he had used during the seven years of his mastership. The restoration of the forceps to its proper position has only been effected during the last twenty years, and its progress was slow until within the last ten years. It is a subject of much rejoicing to me to have lived to see such a revolution begun and brought to so happy a conclusion, and I congratulate the profession in this country on the power they now possess, and I particularly congratulate all unborn infants of the present day on the fact that the innocuous forceps, and not the deadly perforator, will be used to assist their entrance into this world, if necessary.

A form of disease in the human female, formerly utterly hopeless, has in these later days been brought within the reach of art, and a large number of successful operations attest the vast importance and value of the inventions. I allude to the wide and too frequently exhibited class of diseases of the ovary. Some forms of disease of this organ do not necessarily or rapidly terminate the life of the sufferer. Others again (the dropsies) soon give rise to such symptoms as to require the operation of tapping, which is after all but a palliative, and often is itself the immediate cause of death. In these cases where tapping is resorted to the operation has to be repeated sooner or later, and the average duration of life does not extend beyond two or three years. Some cases will be found recorded in which life has been prolonged for many years, and numerousappings have been had recourse to, but these are only the exceptions. The radical cure of ovarian disease was the great desideratum, and I think we have arrived at a period in the history of medicine when we can announce that such has been found. It is not pretended that any proceeding has been discovered by means of which every sufferer from ovarian disease can be relieved from her malady, but from the accounts we now have before us, and the statistics deducible from them, we are justified in stating that the average of recoveries after the two kinds of operation that are now received, and practised, is fully as great as that after most of the great surgical operations, undertaken in cases which, without such interference, must terminate in death. That is the true test whereby to try the value of any operative proceeding. I have alluded to two operations now in general use—one of them suited to only one form of ovarian disease, the other to all. In the first, or what is termed ovarian dropsy, the disease consisting in an accumulation of fluid in one of the cells of the ovary, it has been found that if, after tapping and emptying the sac, a stimulating fluid be injected into it, inflammation of the sac is set up and the sac is obliterated, thus preventing any future accumulation of fluid in that quarter, and curing the disease. This operation has been very successful, and the number of

cases daily recorded fully justifies its adoption in all suitable cases. I have employed it myself with the most complete success, and I think it ought to be tried in all suitable cases previous to the adoption of the other and more serious operation—the complete extirpation of the ovary. This is one of the greatest achievements of the present day; its proposal was at first received with amazement and horror, and the first cases recorded were looked upon as the acme of rashness. From the original small incision of Jefferson, only an inch and a-half or two inches in length, the advance was rapid and startling, when M'Dowall of Kentucky, in America, Lizars of Edinburgh, and Clay of Manchester, laid open the abdomen with an incision eighteen or twenty inches long, from the ensiform cartilage to the pubes, exposed the ovarian tumour, separated its pedicle and adhesions, secured its vessels, and removed the whole mass entire. In recording his first case, operated on in June, 1842, Mr. Clay makes the following remarks:—"In many cases, as I shall afterwards prove, the mode pursued by Mr. Jefferson (the small incision) is not only impracticable but really absurd. I find connected with the Jefferson mode, eight cases, of which five were fatal. With that of Mr. Lizars four by himself, three by Dr. M'Dowall of Kentucky, one by Dr. Smith of Connecticut, one by M. L'Aumonier in France, and one by myself, making ten, of which only one was fatal, and that with great propriety might have been attributed to other causes." This was a most encouraging beginning. I will not weary you by giving a history of the operation from that to the present time, but I will just mention the results as published by some of those who have had most experience in this operation. Dr. Tyler Smith has lately recorded eight cases in which all were successful but one. Mr. Spencer Wells has operated fifty times—of these thirty-three recovered, and seventeen died. Mr. Baker Brown gives the report of sixteen cases in which there were only two deaths; and Dr. Clay gives a retrospect of his operations from 1842 to the present time. The whole number of cases operated on by him was one hundred and four, of which seventy-two recovered, and thirty-two died. Dr. Clay thinks we cannot reasonably hope to extend our success beyond seventy per cent. When we compare these returns with the average recoveries after the great operations in surgery, we see good grounds to rejoice over methods, now within our reach, whereby a most formidable, and hitherto incurable, disease may be fairly encountered.

There are conditions of life, states of existence in which, although life itself is not threatened, nor any great bodily suffering endured, death would be almost preferable. To linger out a number of wretched years loathsome to herself, and intolerable to her nearest relations and friends, shunned by all acquaintances, and unable to mix in the every-day occupations of the world, has been the fate of many a wretched woman. In the great majority of these lamentable cases the condition of the woman

has arisen from mismanagement during labour, and hence the greatest number of them are found amongst the poor, who, in remote districts, have been obliged to depend on the more than doubtful care of the country midwife. Difficulty arises, delay takes place, time, valuable time, is lost in all sorts of foolish devices to expedite delivery. Dangerous pressure is going on all the while, destructive inflammation is established, and the mischief is done, no matter how the delivery is afterwards accomplished, whether by the unaided and persevering efforts of nature, or by the assistance of a medical man, called in too late to prevent the destruction of important parts, by the mortification that must ensue, and which effects are too often charged upon him, when the sad condition of the patient becomes manifest. Sloughing of the bladder takes place, an aperture, varying in size from that of a pin-hole to one of two inches square, in all directions is established, and all control over the organ is for ever lost. These are cases in which the "timely use of the forceps," as Dr. Sinclair so well terms it, would have prevented all the evil results. The unhappy victims of such a fatality have been, until a very recent period, condemned to a hopeless future. Various attempts of different kinds were made, from time to time, to relieve this terrible state, but none were of any avail. Failure after failure damped the energy and sickened the heart of every one who sought a remedy. The glory of triumphing over this hitherto unconquerable malady was reserved for our own time. Our American brethren took the lead in this great discovery. Dr. Marion Sims of New York, followed by Dr. Bozman, contrived, and practised successfully, an operation with sutures of silver wire, by means of which these apertures were closed and the patients were restored to comfort. An eminent Irish surgeon almost simultaneously succeeded in accomplishing the same feat, by a somewhat different method. Mr. Maurice Collis invented a mode of proceeding, by which he had perfectly succeeded in curing several of these cases, before the American operation was well known among us. All this had occurred within a few years, and now the operations for the cure of these fistulæ, as they are improperly termed, are performed with confidence and success in all parts of the empire. Cases, instead of being avoided and discharged from hospitals, are sought after, and encouraged to enter the wards, and, after operation, are sent home to their families, sound in body, happy in mind, and fit and able to take part in all former duties and pursuits. Having been myself a successful operator in such cases, I can bear testimony to the gratification produced in the mind by the satisfactory results that ensue. There is no operation that requires so much time and patience; from one to three hours I have spent in its performance. There is no opportunity of showing great dexterity, as in rapid amputations, or in lithotomy. By-standers get weary and depart, assistants are often worn out and wish it was over, but the operator cannot hurry; every step must be taken with

caution and care, and no matter what length of time it takes, he must take for his motto "patience." But, in success he has his reward; to feel that he has rescued a fellow being from the loathsome misery of such an affliction is worth going through any amount of labour and fatigue. This great triumph of art is another cause of rejoicing; and we, of the present day, have good reason to be thankful, that we have lived in the time when it has been contrived.

I have thus endeavoured rapidly to glance at some of the improvements which have been added to our store, during a comparatively short period, and I think I am safe in saying, that in no other branch of medicine have so many and so great additions been effected in the same time. Before I conclude I would take the liberty of suggesting to the members of this society, that an increased responsibility is now thrown upon them, and that we must take care that the reputation so long enjoyed by the profession in this city shall not suffer through any inertness of ours. We should look across the Channel and see what our brethren in the great metropolis have accomplished in the three years of their existence. The three volumes which I hold in my hand testify to the great energy with which the London Obstetrical Society has been worked. We should recollect that our mature years are expected to hold place with, if not to excel, our younger fellow-labourer. I have no hesitation in saying, that I think the papers in these three volumes of transactions reflect the highest credit on that society. I have every hope that the ensuing session of this society will be one of peculiar value, and nothing that I can do to forward its interests shall be wanting. We have a high vocation, and much is demanded from us; but above all things, while working with earnestness, exulting in our ingenuity, and taking pride in our instruments and handy-work, let us never forget that we ourselves are but instruments in the hands of the Great Physician, the Great Mechanician, without whose help and blessing all human efforts are unprofitable and vain.—*November 29, 1862.*

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*Large Vesical Calculus Expelled by the Natural Efforts, by a Woman in the Seventh Month of Pregnancy.*

Dr. J. A. BYRNE exhibited a calculus expelled by a woman seven months pregnant.

The history of this case was this:—It was the woman's second pregnancy; since the commencement of it she had suffered from symptoms of vesical irritation, which had gradually increased in intensity, and caused a good deal of pain, frequent desire to make water, &c., &c.

When she was approaching the end of the sixth month these symptoms had become very much aggravated; and one morning, after arising from bed, she found that on attempting to make water, not a drop would pass.

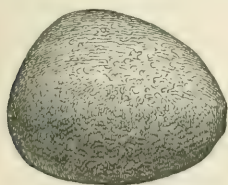
This, of course, astonished her a good deal; and frequently during the day and night she repeated the attempt, but with the same result. She felt all the symptoms indicating retention, but, notwithstanding her repeated efforts, she could not succeed. She passed a most restless night, as may well be imagined, and resolved to seek advice on the following morning.

Before, however, doing so, she determined to make one more effort, and, in sitting down upon the chamber, and using some force, she heard something falling into it, and a great gush of urine followed; on looking into the vessel she perceived, to her astonishment, this stone, which she afterwards brought to me, and thus I have the opportunity of showing it to the members of the society.

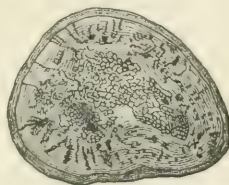
After this she experienced no further annoyance, all the symptoms of urinary irritation subsided, and she was delivered, at the full time, of a healthy male child.

From the time she passed the calculus she had not the least *incontinence of urine*.

The retention of urine continued for 24 hours exactly, and no longer, otherwise some temporary incontinence might have followed on account of the large size of the calculus, which is more than one inch in length, is an inch in breadth, and three-quarters of an inch in thickness. It weighs 119·33 grains, and its chemical composition is tri-basic phosphate; its outer surface is smooth and easily broken up, but its nucleus, although of the same composition as the outer part, is more dense and harder. On looking at the calculus, of which a drawing is annexed, as also one of its section, we cannot fail to observe its well-marked wedge



Calculus.



Section.

shape; it is obovate, and it is highly probable that it entered the meatus by its narrow extremity, and that, by degrees, it passed along, dilating the urethra, until finally it was expelled in the sudden manner that has been mentioned. Now it was fortunate for the woman that such was the case, as it would have been difficult for the large extremity to have entered the meatus; once lodged, however, in this short canal, it began to dilate it, and that quickly. It is interesting in a surgical, point of view, that during the period of retention no surgeon was called in, because he could not have failed to feel the calculus with the catheter, and of course would have taken

means to remove it, and thus this case, so strongly illustrative of the dilatability of the female urethra, would have been lost to science.

It is worth mentioning, that during her first pregnancy she did not suffer from any stone symptoms whatever, and the interval between her pregnancies was only 12 months, so that either the calculus must not have given any annoyance, or it must have been developed during the early seven months of her second pregnancy.

Dr. Byrne drew the attention of the society to the case mentioned by Cazeau, in his *Art des Accouchements*, in which he mistook a calculus for the fetal head, descending upon the point of the finger, in trying for *ballotement*, and was very nearly pronouncing a woman pregnant; however, on examining further, he detected the stone floating loosely in the bladder. And also to the case detailed by Dr. M'Clintock, which occurred in the Lying-in Hospital whilst he, Dr. Byrne, was assistant; in this case (the woman's first pregnancy) the symptoms of urinary distress were extremely severe; the woman passed blood and pus, mixed with urine, and an operation to remove the stone became necessary; the stone, however, in Dr. M'Clintock's case, was rough and lodged in a sac. The removal of it was followed by recovery.

The two cases, he thought very interesting as complications of pregnancy.—*December 13, 1862.*

DR. J. R. KIRKPATRICK exhibited a *Congenital Nevus*, situated on the anterior part of the right thigh of a child born in the Rotundo Lying-in Hospital last November. The nevus was the size of a large hen egg, and extended from just below Poupart's ligament to the knee. Externally it was of a dusky red colour, and had many superficial veins running from the circumference towards the centre, where the integument appeared very thin, and disposed to slough. Internally the nevus was composed of innumerable meshes of veins, some of which were dilated into large sinuses. The sartorius muscle passed through the under surface of the tumour, and was surrounded by several loops of veins. The child died on the fourth day after birth. In every other respect it was a well formed and fine child. No thrill or pulsation could be felt in the tumour during life, except on the inner side, apparently from a superficial branch of artery.—*December 13, 1862.*

DR. M'CLINTOCK read the following paper on *Dropsy of the Ovum*.

It must be confessed we know very little of the pathology of this complaint, or of the special conditions which give rise to it. In very many of the cases which have fallen under my observation I have instituted careful examinations on these heads; yet, in but few examples was there any notable appearance of disease of the amniotic membrane. In these

exceptional cases the amnion was partially opaque and thickened, but nothing more. That the disease does not depend on a dropsical diathesis of the woman herself is shown by the fact that these women are often free from dropsical effusions in any other part of the system; and also, that very many patients are affected with general dropsy at the time of delivery, in whom, nevertheless, there is no marked redundancy of the amniotic fluid. The former of these statements is strikingly illustrated by the following case:—

CASE I.—A lady, aged 33, in her tenth pregnancy, enjoyed very good health up to the beginning of the seventh month of utero-gestation. She then began to observe that the size of the abdomen was augmenting in a very unusually rapid manner. This went on for about a fortnight, when the belly had attained so enormous a magnitude as to be productive of extreme pain and distress. At this stage it was that I first saw her. She was a tall spare woman, and entirely free from anasarca. The abdomen was immensely swelled, tense, and obscurely fluctuating. She was uneasy in every attitude or position, but most so when lying down or recumbent; though she did not complain of dyspnea. The pain of the abdomen had deprived her of all rest for the three previous nights. The urine was scanty and turbid; the tongue clean.

I prescribed for her some diuretic mixture, and an anodyne draught. The next day I found her no better. She had passed a most wretched, sleepless night, propped up in an arm chair. On making an internal examination, the edges of the os uteri were ascertained to be very thin, and the orifice expanded to the size of a halfpenny; the membranes protruding and extremely tense: no presentation of the fetus distinguishable. The membranes were easily torn with the nail, whereupon a volume of water instantly gushed out, and, almost at the same time, the head of the fetus; its birth was retarded as much as possible; but the temporary obstruction—caused by the child—being removed the torrent began afresh, filling every available vessel, and deluging the bed and floor, within the brief space of a minute or two. The child was a female, and its funis pulsating; but it made only a few feeble efforts at respiration. The uterus contracted tolerably well, throwing off the placenta in twenty-five minutes, without hemorrhage. Her convalescence proceeded most satisfactorily, and the only deviation from the ordinary course of things was the size of the uterus, which remained inordinately large for a considerable time.

This lady had premature confinements on two former occasions, under circumstances very similar to the present, with this difference, that the quantity of water was not quite so great. These two children also were females.

Dr. W. D. Moore, of South Anne-street, was good enough to examine a specimen of the liquor amnii, four hours after delivery. Its specific

gravity was 1004 ; it had a slight alkaline reaction, and contained a trace of albumen.

The case above narrated shows that there is some liability to a return of the disease in a future pregnancy, although such an occurrence is far from common. When *hydrops amnii* affects a woman pregnant of twins, we usually find that the amnion of one child only is engaged ; indeed, it very seldom happens that both ova are dropsical. Curious to say, it is the amnion of the second born twin in which the liquor is redundant. Thus, of *eleven* twin cases in which the disease was present, it was confined to one amnion in all of them ; and in every instance, with two exceptions, it was the amnion of the second twin.

The dropsical effusion being confined to one ovum is a fact that plainly implies its cause to be of a purely local kind. That the fetus of the dropsical bag of membranes should be the last expelled most probably is due to its greater mobility, and to the greater ease with which it can be displaced towards the fundus of the uterus, by its more circumscribed companion.

CASE II.—A large, florid-faced woman, aged 38, in her twelfth pregnancy, was admitted into the hospital, December, 1854, with spurious pains. The abdomen was of immense size, indistinctly fluctuating ; the legs were œdematous, and she suffered from cough and dyspnea. The os uteri was patulous, but the membranes were not pressing into it ; fetal heart inaudible. She was in the ninth month, and had noticed that, within the last fortnight, she had undergone a great augmentation of bulk.

The pains having gone off, she left the hospital ; but returned again in a few days. She was confined, *en route* to the hospital, of a putrid child ; and on rupturing the membranes of the second twin, after her admission, about seven quarts of water were discharged. This child appeared rather more decomposed than its fellow.

All her other children—ten in number—were born alive. On the present occasion the children were females, and the umbilical vessels of the first twin separated from one another at some distance from the placenta, and ran into the edge of the latter, widely apart, constituting the *insertio velamentosa* of the old authors.

CASE III.—A Scotchwoman, aged 24, seven months advanced in her fourth pregnancy ; former children born alive at term. When admitted she was not in labour, but the tongue was furred, the pulse frequent, and she complained much of pains in the loins ; urine natural in quantity and appearance. The abdomen, which was 43 inches in circumference, presented well-marked fluctuation. No œdema of the labia, legs, or feet. Up to three weeks previously her size had been natural for the period of pregnancy, but since then she had rapidly enlarged. The history of this case, the absence of dropsical effusion elsewhere, the existence of

pregnancy, and the shape of the belly, all concurred to point it out as one of hydrops amnii. But, on the other hand, there was some enlargement of superficial veins of the abdomen; and, on vaginal examination, it was ascertained that the cervix was not yet obliterated, and that the presenting fetal head *was pressed so strongly against the lower part of uterus as to be scarcely moveable*. This circumstance was the chief difficulty in the way of making the diagnosis of dropsy of the amnion. She took her labour in a few days afterwards, and quickly expelled a putrid female fetus. The existence of a second was ascertained, and its membranes were ruptured, when between two and three gallons of liquor amnii came away. Here, then, we had a satisfactory explanation of the impossibility of practising *ballotement* in the first instance. The second child, a girl, presented with the feet, and was extracted alive, but in a weakly state, so that it only lived a few hours. This woman got a sharp attack of metritis on the second day, which was successfully treated by leeching &c., and she went home quite well.

The great ease with which *ballotement* can be performed is generally laid down as a diagnostic mark of dropsy of the ovum. The case just related plainly teaches us, however, that, in certain cases of the disease, we are to expect the presenting part of the fetus to be unusually fixed at the os uteri.

To make the diagnosis of twins, in the absence of any auscultatory evidence, is very rarely possible; but to do this, and at the same time to diagnose a dropsical condition of the second ovum, would seem, *prima facie*, to be quite beyond our reach; and I am not aware that such a diagnosis has ever been made in midwifery. However, with the data before us that I have just stated, it would appear, in a given case, to be a legitimate deduction.

This disease shows itself more commonly in subsequent than in first pregnancies. Of *thirty-three* of my cases, where this point was specially noted, only *five* were first labours; *eight* were second labours; *one*, a twelfth; and the rest intermediate. Occasionally it takes place very slowly and imperceptibly; but in by far the larger proportion of cases it was, comparatively speaking, rapid in its development; and the knowledge of this circumstance in the history of the complaint will oftentimes aid us in arriving at a diagnosis. Sometimes it was attended by symptoms of a rather acute kind, such as thirst, fever, diminished secretion of urine, and much abdominal pain and uneasiness. This last would seem referable more to the distension of the uterus than to any other cause.

CASE IV.—A lady of very lymphatic temperament, aged 28, when in the latter end of her third pregnancy, came under my care, complaining of orthopnea, irritable stomach and bowels, thirst, sleeplessness, and a constant dull pain in the right hypochondrium. The uterine tumour was unusually large for the period of pregnancy (the end of eighth month),

but there was no œdema of the labia, legs, or feet. The pulse was generally small and frequent. I may remark, that for many months her health had been very delicate. Treatment succeeded in relieving some of the more urgent symptoms, but the abdomen continued to enlarge, and with this increase the dyspnea became more distressing, so that she spent all her time in a sitting posture.

A few days afterwards she fell in labour; and on my arrival at her bedside, finding the os uteri somewhat open, and the head or breech presenting (the mobility of the part prevented my ascertaining which), I broke the membranes, whereupon the breech descended, and there escaped about four quarts of liquor amnii. From the time of delivery all the dyspnea and abdominal pain entirely subsided, and for the first time for some weeks, she was able to enjoy the luxury of a refreshing natural sleep in the recumbent posture. She made a good recovery, though the frequency of the pulse for the first few days caused me considerable uneasiness.

CASE V.—A woman, aged 29, in the seventh month of her sixth pregnancy, was admitted to one of the chronic wards of the Lying-in Hospital, December, 1857. About six weeks before, she began to experience crampy pain in the belly, which was larger than usual for the period of gestation. Shortly afterwards there came on a sanguineous discharge from the vagina, which recurred again and again, in variable quantity, and at times was quite watery or serous.

When the discharge was absent for some days the abdomen enlarged and the uterus became hard and painful. These symptoms went away when the discharge recurred, which it often did in gushes. It was at first supposed that this might be a case of hydatids, or cystic disease of the ovum, but auscultation showed this to be highly improbable, if not impossible, as the fetal heart was distinct and loud, and hydatids never, or almost never, coexist with a live fetus. The placental soufflet was also plainly audible on the right side of the uterus, extending up to near the fundus. The os uteri was thick, and abraded on its anterior lip. Pulse 110, and irritable. Cold enemata, astringent injections into vagina, and mild cauterization of the os uteri, were employed, but without any effect whatsoever on the discharges, which were at times very profuse, and consisted of a reddish water. Some days subsequently she took her labour, and, after four hours' illness, expelled a living female child, which presented with the breech. Immediately following the placenta was a mass of coagulated blood and fibrin. The placenta was healthy, but of a rather pale colour and infirm structure. Her pulse continued frequent for some days after delivery, but she, nevertheless, made an excellent recovery.

There can be little doubt that this case was one of dropsy of the amnion (or chorion), the fluid at times making its escape externally, and

always with marked relief to the abdominal pain. The hemorrhage arose from "accidental detachment of the placenta," produced, probably, by the alternate distension and relaxation of the uterus.

A dropsical state of the amnion is a very common morbid condition of abortive ova; and I cannot help thinking, with the late Professor Andrew Retzius, of Christiania (who drew my attention to this fact when looking over the Museum of the Lying-in Hospital), that it is a very frequent cause of the early death and expulsion of the embryo.

Of thirty-three cases of amniotic dropsy carefully noted by me, *one* ended in abortion at the fifth month, and *one* at the sixth month; *ten* resulted in the decidedly premature expulsion of the fetus; and in the remainder the child seemed to have, at all events, reached the ninth month, though in some of them it most probably had not completed it.

There seems good reason to believe that some of the cases of the disease called "hydrometra," or dropsy of the womb, were of the kind now under consideration—were, strictly speaking, a disease of the ovum, and not of the uterus; just as the so-called hydatids of the uterus is, in truth, a disease affecting only the involucra of the embryo. Many of the recorded cases of "hydrometra" admit of a much more rational explanation of their history and phenomena, and one more consistent with the physiology of the uterus, on this supposition than on any other pathological view.

This morbid excess of the liquor amnii, or, perhaps, the morbid action from which it results, seems to be very unfavourable to the well-being of the fetus, as *nine* of the children were dead born, *five* of which were in a putrid condition; and *ten* of the live-born children died within a few hours after birth. It occurred more frequently with female than with male children, in the proportion of *twenty-five* of the former to *eight* of the latter. The great difference between these numbers is very remarkable, and would almost suggest the probability of there being something more than a mere accidental association of this disease with children of the female sex.

The presenting part of the child was noted in *thirty-one* instances—and among these the head presented on *twenty* occasions, the pelvic extremity *nine* times, and the upper extremity *once*. We could not, from these numbers, safely infer that a redundancy of the liquor amnii favoured preternatural presentation, because there is another circumstance connected with these cases which would go far to account for it, namely, the great frequency among them of premature labour—of the *thirty-three* cases nearly one half having terminated in the premature expulsion of the ovum.

In the acute form of this disease it would perhaps be rather difficult to trace the symptoms to their real cause, unless the dropsical condition of the amnion was discoverable by physical examination. The enlarged uterus may be confounded with plural pregnancy, or with ascites. Where there is much distension of the uterus a feeling of fluctuation will be

communicated, with great distinctness, to the hand on percussing the abdomen, so that, in extreme cases, it would be impossible to arrive at a positive conclusion by this mode of examination. Internal examination will generally supply stronger evidence. The expanded state of the cervix, the extreme tension of the lower segment of uterus (or of the membranes, if the os be open), and the ease with which the child can be displaced, are all corroborative signs of the ovum being unusually distended with fluid. With reference to the last-mentioned sign, we must bear in mind what occurred in Case III., already related, which clearly shows that a dropsical ovum may coexist with immobility of a presenting fetus.

Some writers have stated that inaudibility of the fetal heart's sounds, and of the placental murmur, are results of amniotic dropsy. But this observation can only be received in a very qualified manner. No doubt, in a considerable proportion of these cases the child *is* dead, and its heart, therefore, inaudible; in many of them the patient is still far removed from the end of pregnancy, and this in itself creates a difficulty to hearing the fetal heart; but, in these and the remaining cases, we may generally succeed in detecting it, as I myself repeatedly have done, by persevering and diligent exploration.

In a few instances I have heard the placental murmur distinctly, and with all the characters belonging to it. In these cases I discovered it accidentally. Not having sought for it in any of the cases, I cannot say whether it is more or less easy of detection than under ordinary circumstances. The entire superficies of the uterus is certainly very much increased, but in the same proportion is the placental area increased; and I have little doubt it is the interference arising therefrom to the placental circulation which causes so many of these fetuses to be born in a dead or dying state. The first stage of labour is very commonly protracted in these cases from inertia, caused by the over-distension of the uterine fibres. Occasionally the cervix is completely effaced, and the mouth of the womb in a somewhat dilated state for days; but the uterus seems incapable of making any vigorous effort to expel its contents, or to rupture the membranes. Case I. was a good example of this, as was also the following:—

CASE VI.—A woman, seven months pregnant of her eighth child, presented herself at the Dispensary of the Lying-in Hospital, complaining of pain in the belly, and of her unnatural size, which led her to think she must be “distended with wind or water, in addition to being with child.” The uterine tumour was larger than it ordinarily is at the end of the ninth month, and this abnormal increase of bulk had taken place, she says, within the last fortnight. Her feet were slightly œdematous. Dropsy of the amnion was suspected, and this opinion was confirmed on examination. The lower segment of the uterus was full and tense, the

os uteri enlarged to the size of a shilling, and the membranes pressing strongly into it, and no part of the child could be felt presenting. She would not remain in the hospital, though urged to do so on the ground that her labour had set in. This, she said, was impossible; or, if so, she must have been in labour for fully five days; and it certainly seemed not altogether improbable that the uterus had been making slight, but ineffectual parturient efforts throughout this period. Some hours after leaving the hospital the membranes gave way, and several quarts of water were discharged. A premature child was expelled footling; but owing to delay between the birth of the trunk and of the head, through want of assistance, its life was lost. I got Mr. Connolly to make a drawing of the child, as it presented some remarkable appearances. There was a total absence of the thumb of the right hand, which was in a state of forced flexion. The umbilical aperture was very large, and through it protruded the spleen and small intestines. These, together with several ounces of clear amber-coloured fluid, were contained in a cyst formed by the membranes of the cord. An inch on the placental side of this cyst was another globular swelling of the cord, about the size of an orange, and likewise containing yellow fluid. The preparation of this fetus is in the Museum of the Lying-in Hospital.

A question of deepest interest connected with this disease of the ovum is its influence on maternal mortality. Now, of the 33 cases here reported, four ended in the death of the mother. One was from rupture of the uterus (the child, in this instance, was hydrocephalic); another from puerperal fever, at the time epidemic; and the other two deaths were from debility and prostration. Each of these latter women had been confined of twins, and were in a broken down state of health at the time of delivery. The above results will abundantly justify the observation, that a comparatively high rate of mortality may be expected amongst patients who are the subjects of dropsy of the ovum. One very influential reason for this may be found in the fact, that a large proportion of these women are in a more or less cachectic debilitated condition of body; in fact this state may be regarded as a strongly predisposing cause of the disease. Of the women who recovered, *three* had smart attacks of uterine inflammation after delivery. Altogether, then, it is plain that these patients, more than others, require to be closely watched during child-bed.

I know of no treatment capable of arresting the secretion of the liquor amnii, or of causing its absorption where already secreted to an excessive amount. I have made trial of mercury, hydriodate of potash, diuretics, and other remedies, but could not perceive any good effect from their employment. Of course, when the distension of the uterus becomes enormous, puncture of the membranes must be performed, even though labour may yet seem distant, in the natural course of events. The

patient may suffer much pain and discomfort, apparently connected with the disease in question—as, for example, in Case IV.—but where as yet the distension of the uterus is not so great as to justify a measure which we know will bring on labour. If it were possible to draw off only a portion of the fluid contents of the amnion, perhaps labour would not immediately follow, and doubtless great relief would accrue to the patient, who could thus be carried forward in her pregnancy.

The history of Case V. furnishes us with a very good precedent for such a practice. Here nature seems to have tapped, as it were, the dropsical ovum from time to time, and let off a quantity of the superfluous fluid contained within it. How to explain the mode by which this was effected I am quite at a loss; as we have seen, however, the patient always experienced very great relief by these discharges; and it is more than probable that but for them her pregnancy would not have gone on so long as it did; its premature occurrence eventually, was, without doubt, the consequence of the severe hemorrhages.

The effect of this super-excess of liquor amnii upon the process of labour is generally, indeed I may say always, to retard it. The pains are constant, but not severe—not amounting to the degree of a regular labour pain; but yet they are most teasing to the patient. Very many hours, or even days, as we have seen, may be consumed in this way, before the os uteri will have reached the size of a penny. Under circumstances such as these, and where the accession of labour has evidently taken place, there may be no hesitation about letting off the water, with such precautions as the position of the fetus may call for.

In the heading of this article I have called the disease we have been considering “dropsy of the ovum,” because it may fairly admit of question, in some cases, whether the excess of secretion be in the amnion or in the chorion. Every accoucheur occasionally meets with instances where there are “false waters,” or liquor chorii; and hence I see no reason why this secretion may not occasionally be in excess as well as the liquor amnii. This would seem to have been the case in the following instance, which was communicated to me by my valued friend, Dr. Brunker, of Dundalk:—

CASE VII.—The patient was in her ninth pregnancy; and, from her great size and evident abdominal fluctuation, she was supposed to have ascites coexisting with pregnancy. For some days previously to Dr. Brunker seeing her, the abdomen had so rapidly increased, and to such an extent, as to be productive of extreme bodily inconvenience and embarrassment to respiration. The patient had not been able to lie down for days. The belly was distended, apparently to the utmost degree; and on percussing it a most distinct fluctuation was felt. It was agreed between Dr. Brunker and Dr. Browne (the gentleman in attendance) to puncture the membranes, and so permit the evacuation, of the waters.

This was easily done, and an enormous quantity of fluid came away, with great relief to the patient. Labour supervened in 12 hours, when the woman gave birth to twins, and with each fetus "there was an unruptured bag of membranes." The children appeared to be of seven and a half months' development; they breathed feebly, and did not long survive. The patient made a very good recovery.

One case more I must be allowed to relate. There were other circumstances about it besides the amniotic dropsy which render its history interesting.

CASE VIII.—E.D., aged 40 years, seventh pregnancy, was admitted to the Lying-in Hospital, 21st February, 1857. Soon after her admission the membranes ruptured, and upwards of *eight quarts* of bloody liquor amnii were discharged. The uterus immediately contracted pretty firmly on the child. Upon making a vaginal examination the greater part of the placenta was found protruding through the os uteri, and an arm of the child presenting. Some hemorrhage was going on. As the uterus was contracting strongly she was put under the influence of chloroform preparatory to the operation of turning. On introducing my hand for this purpose, I discovered that the os had contracted so much as to permit only two fingers to get through it: however, with these two I was fortunate enough to seize and bring down a leg. Much trouble was experienced in extracting the body of the child, which was a female, and in a decomposed state. On the second day she had a rigor, followed by rapid pulse, hot skin, and a dry brown tongue, but no uterine pain or tenderness. She was ordered large doses of James' powder, four ounces of brandy in the day, and poultices to the belly. On the third day the pulse was 100, and on the fifth day it had fallen to 88. She was quite well and able to go home on her ninth day.

I have prefaced this paper with the observation that we know, as yet, very little of the pathology of dropsy of the ovum. Of its particular cause, it must be confessed, we know absolutely nothing.

Still, the facts I have brought forward have a bearing upon the general pathology of this disease, and enlighten us upon some important points connected therewith.

1. Dropsy of the ovum certainly does *not* depend on any dropsical diathesis of the patient herself. This fact, I think, is clearly established.

2. There is no doubt, also, that it may occur quite independently of any dropsical condition of the fetus, such a concurrence being but very rarely met with; and hence being, we may presume, purely accidental.

3. It is not constantly associated with any appreciable morbid condition of the membranes or placenta; at least in some exceptional cases only did they present any deviation from their ordinary appearance.

4. The cause of the dropsy would seem to be a purely local one. This

is inferrible from the frequently observed fact that in plural pregnancies, where the disease was present, it was confined, in every instance, to one ovum only.

5. My experience of this disease does not lead me to think that it has any connexion with syphilis. In only one of all the cases on which these observations are founded was there any just ground for supposing the woman to be infected with syphilitic poison. In this exceptional case, father, mother, and child, all presented unequivocal venereal symptoms.

With regard to the *functions* of the amnion, we meet with three classes of facts which help to illustrate them:—

1. Cases of plural births occasionally are met with in which one of the fetuses having been blighted, the fluid contents of its enveloping amnion have disappeared. This I would attribute to its absorption by the membrane itself.

2. Again, we meet with cases in which the liquor amnii presents a very altered appearance—all its sensible characters being changed, and, instead of being transparent, thin, and inodorous, it is thick, turbid, and fetid. This is an instance of morbid or perverted secretion.

3. Lastly, we have seen that the quantity of the secretion may be enormously increased.

These facts all concur in strengthening the analogy between the amnion and serous membranes, by showing that it can, under certain circumstances, *increase, absorb, or alter* its proper secretion.

All this does not carry us far, however, towards explaining how the disease in question is produced. But I believe we must rest content with this limited amount of knowledge till physiologists make us better acquainted with the vital constitution of the amnion and other temporary organs concerned in the nutrition and development of the fetus.—*December 13, 1862.*

## TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.\*

SESSION 1862-63.

DR. W. C. TOWNSEND, President.

*Heart Disease and Aortic Aneurism.*—The PRESIDENT exhibited a pathological specimen, and read the following remarks:—

Thomas Galwey, aged 52, served 21 years in India, in 4th Dragoons;

\* These Reports are supplied by Dr. T. W. Belcher, Secretary to the Society.

of very intemperate habits; admitted, for the first time, into the Workhouse Hospital about 11 years ago, under the care of Professor O'Connor. Since that time he has been frequently in hospital; and for the last 12 months constantly so. I saw him for the first time in January, 1857, when he gave the following history of his case:—Some years before he left India he received, from a horse, a kick in the chest, which rendered him insensible. He was at once taken to hospital, bled, leeches, and cupped. He remained in hospital several months, and was then discharged. He continued to serve as a soldier, but suffered more or less from palpitation, particularly when he made any exertion, or had—to use his own language—a bout of drink. After the return of the regiment to England, he was discharged, owing to his having absented himself without leave, on a drunken frolic. He presented a worn appearance, but stated that he did not suffer from cough, pain in the chest, difficulty in swallowing, or, in fact, any other inconvenience, except the palpitation. With that exception he enjoyed very fair health. When standing at his bedside a loud cooing murmur was distinctly audible. On placing my hand over the precordial region the vibration and increased impulse was most remarkable; percussion showed a great extent of precordial dulness. On examination I found a loud double murmur clearly audible over every part of the chest, but most intense about the middle and upper portion of the sternum; the pulse clearly indicated aortic regurgitation. After remaining in hospital for some time he left, and enlisted in the West Cork Artillery, where he acted as groom to the colonel, but was unable to do any duty. Since that he has spent his time in hospital, with the exception of about three months last autumn, when he was in charge of an orchard near the city. For the last nine months his health had been declining; he wasted very much, and suffered from occasional attacks of hurried breathing, which usually came on at night; still his spirits were good, and he enjoyed very fair health. On the morning of the 17th of September he was attacked with violent dyspnea, and died in about six hours.

On examination the body presented considerable emaciation. On opening the thorax the lower part of the left lung was found collapsed, and adherent to the lower and posterior part of pleura, with effusion into pleura (right lung not examined).

The pericardium healthy; no effusion into it. Heart very much enlarged; weighed (with arch of aorta and about three inches of trachea) two pounds nine ounces. The valves of right side of heart pretty healthy; the left ventricle very much enlarged, and the auriculo ventricular valves much thickened and uneven, from cartilaginous deposit. The aortic valves were very much thickened at their free margins, and turned down into the ventricle. There was a small true aneurism at the right side, immediately above the sinus of Valsalva.

At the first curve of the arch of the aorta, situated on its posterior wall, was a sacculated true aneurism, rather larger than a small nut; around its orifice and on its walls, situated beneath the lining membrane, were several calcareous deposits (after a few days maceration the lining membrane was clearly demonstrated). About a quarter of an inch further on, and more inferior, was a sacculated false aneurism, about the size of a lemon; its orifice was about the size of a shilling, and around the aperture the middle and inner coats were grown together, and had become much thickened. The sac contained a large quantity of decolourized fibrin, a great part of which had undergone degeneration, apparently of an atheromatous character. No rupture of the sac could be found, or communication with anything but the aorta.

Externally the sac was adherent to the trachea, at its bifurcation, and also for about half an inch to the true aneurism. In the descending cava, about a quarter of an inch from the vena innominata, was a red zone extending round the vein. The left vena innominata appeared smaller than natural.—*October 8, 1862.*

*Notes on the Treatment of Continued Fevers, and other Acute Diseases.*<sup>a</sup> By T. W. BELCHER, M.A. & M.D., T.C.D., B.M. & M.A., Oxon.; Licentiate of the King and Queen's College of Physicians in Ireland; Physician Extraordinary to the Cork Fever Hospital, &c., &c.

Ἐν γὰρ τοῖσιν οὐρεσὶ τῶν νοσημάτων τοσόνδε διοίσουσιν ἀλλήλων οἱ χειρωνάκται, ὥς τε ἂ δ' ἕτερος προσφέρει ἡγεύμενος ἀρίστα εἶναι, ταῦτα νομίζειν ἤδη τὸν ἕτερον κακὰ εἶναι.  
ἸΠΠΟΚΡΑΤΗΣ.

About two years ago I had the honour to read, before the Cork Medical and Surgical Society, a paper on the treatment of acute diseases, illustrated by several cases of pneumonia.<sup>b</sup>

I then clearly proved, I respectfully submit, that the cases referred to recovered without bleeding, tartar emetic, or mercury; and that they recovered in a much shorter time than is usual with persons treated on the older methods.

The plan—not by any means original—explained in my previous paper, consisted in using remedies to promote the free action of the skin, kidneys, and, to a lesser extent, that of the intestinal mucous membrane; with constant local stimulation, and upholding the powers of life by *food* capable of assimilation, such as beef tea and alcohol.

<sup>a</sup> This paper was first read before the Cork Medical and Surgical Society; and subsequently, in its present revised form, before the Regius Professor of Physic in the University of Dublin, as a thesis for the Doctorate in Medicine.

If any apology be necessary for presenting it to the profession, it must be simply this—the incalculable importance of the subject, and the duty of every physician to bring *facts* to bear on a controversy which is of vital importance to the community.

<sup>b</sup> See Dublin Journal of Medical Science, Vol. **xxi.**, p. 446, &c.

This proceeded on the very reasonable hypothesis that the disease, instead of being attended with undue exaltation of the vital forces, was, in fact, a disease of nutrition; that the vital powers were depressed, and required support to conduct the system through an ordeal which could not be cut short.

It, doubtless, appears plausible to assert that the want of appetite, weakness, and wasting, occurring in acute diseases, are natural processes intended to act as "a set off" against the presumed exaltation of the vital forces; that in fact life is at so high a pressure that food would burst the safety valve; and therefore the less of it the better.

A more natural explanation of these phenomena is, that nutrition being arrested the results above-mentioned plainly follow; and the obvious tendency of judicious treatment should be to uphold the system by such food as can be easily assimilated.

When Dr. Graves wrote his own epitaph—"he fed fevers"—he made a great move in the right direction; and a recent authority, Dr. Lyons, says:—"The starvation plan of treatment, based on phlogistic pathology, has, when combined with depletion, consigned numbers to the grave."<sup>a</sup>

On this assumption treatment by bleeding and tartar emetic was set aside; and for the very plain reason, that if the disease itself depressed the vital powers of the patient, bleeding and tartar emetic would tend to extinguish them altogether.

The use of mercury was discarded, because its presumed advantages, in cases like these, rest on mere theorising; and, as the theory of inflammation, on which its employment as a remedial agent was based, is by many scientific authorities now deemed unsound, its use is certainly questionable. Moreover, as patients recovered quickly without it, it was deemed inexpedient to inflict on others a cure which, even in the most prudent hands, was often worse than the disease, and which insured to the recipient a lengthened convalescence. It is not at all intended to insinuate that persons cannot mend, and have not recovered when treated by the plans above objected to; they certainly have recovered when so treated; but then many have recovered without any treatment at all.

I am convinced, however, that the proportion of recoveries, and of quick recoveries, under the supporting method is much larger than under any other, and therefore I believe it to be the best and surest mode of treatment.

I now beg to bring before you records of cases of various "acute diseases;" and first I shall read, in detail, one of pneumonia:—

John D., aged 21, a young man of exemplary habits, who had been accustomed to perform a good deal on the corneopæan, in a brass band, was

<sup>a</sup> Treatise on Fever, p. 199.

taken ill, June 8th, 1862. I found him in bed, with a high circulation, hot and dry skin, complaining of cough, with pain in the chest, and the general symptoms of pyrexia.

Puerile respiration was established in both lungs. Having first directed him to take a purgative, to remove constipation, I advised that he should have five grains of Dover's powder, every third hour, and that frequent turpentine stupes should be applied to the front and back of both lungs.

June 9th.—General symptoms much the same as yesterday. To continue the treatment; beef tea.

10th.—Right lung solidified posteriorly, and crepitus anteriorly in both lungs; expectoration rusty and viscid. To take the following mixture:—Nitrate of potash, 1 drachm; tincture of squills, compound tincture of camphor, and sulphuric ether, of each two drachms; water, 10 ounces. One ounce to be given every four hours; also to repeat the Dover's powders, beef tea, and turpentine stupes to both lungs. Further, wine eight ounces.

11th.—Pulse, 116; respirations, 32; slept better last night than on the preceding; expectoration rusty, viscid, and tinged with blood; urine high coloured and copious; tongue brown and dry. Solidification replaced by crepitus in the back of right lung; mucous râles anteriorly, in both lungs. To continue the treatment as on yesterday.

12th.—Pulse 100, and soft; respirations 28; skin moist; sputa still rusty; mucous râles in right lung anteriorly; respiration re-established everywhere; tongue white; chlorides, in small quantities, present in the urine. To continue treatment.

Evening.—Pulse 106 and soft; respirations 26; sputa less rusty and less viscid; natural breathing re-established, save in the upper third of right lung anteriorly, and crepitus in lowest third posteriorly. Treatment continued.

June 13th.—Slept very well; skin soft; pulse 82 and soft; respirations 26; sputa same as last night, only less in quantity; tongue cleaning at edges; bleeding from the nose; physical signs much improved. Repeat the powders and mixture, one dose of each every six hours; stupes, wine, and broth as before.

14th.—Slept very well last night; pulse 70; respirations 22; skin moist; sputa very copious, less viscid and rusty; bowels costive; face clearer and lighter in colour; urine copious, with lithates; respiration improved; pain in right pleura where there is a slight friction sound.

To have five grains of Dover's powder at night; stupes to pleura twice, and once to upper third of right lung anteriorly (in consequence of slight dulness on percussion). Add 10 grains of ipecacuanha to mixture, and to take a castor oil draught.

June 15th.—Slept well last night; pulse 74; respirations 30; skin

soft; tongue cleaner than at last visit; expectoration natural. Got up this evening.

16th.—Pulse 80; respirations 26; stupe once to right side.

17th.—Chop and ale; wine gradually diminished during the last few days. Cough still remains; continue the cough mixture.

18th.—Ceased to visit him.

From first attack to convalescence, 8 days; under my care altogether, 11 days.

The wine given in this case did not, at any time, exceed 8 ounces in the 24 hours, and it was gradually diminished as the patient improved.

Here, then, was an instance of a young person placed under medical treatment, at an early stage of his illness, before solidification had occurred. The circulation was so high, and the breathing so embarrassed, that had the case occurred three years ago, I should certainly have bled him at my first visit. In fine, it was not one of these *typhoid* cases which some, who object to the *principles* here advocated, feel compelled to treat in *practice*, in a manner very similar to that just now instanced; and the *fact* that he was convalescent and out of bed within *eight* days from his first attack, is, so far as this particular case goes, an argument which cannot be answered.

Next, I beg your attention to some brief notices of a few cases treated by me, in the (Cork) Fever Hospital during the past summer (1862).

Honora B., aged 14, admitted August 31st, with well-defined symptoms of *scarlatina*; was five days ill on admission.

Her treatment consisted in the use of an alum gargle; strong solution of nitrate of silver to the internal fauces; a diaphoretic mixture; five grains of Dover's powder every night; tepid sponging on the surface of the body; drinks of solution of chlorate of potass; beef tea and wine from two to four ounces.

She was convalescent August 6th, seven days from admission.

Richard P., admitted with *scarlatina*, September 13th, treated on the same plan as above. Convalescent September 20th, seven days from admission.

Mary T., aged 7, admitted, with *small-pox*, August 25th; six days ill before admission; had not been vaccinated.

This child had beef tea throughout, but no wine. Her case was, so far as the eruption went, a very severe one; yet she was up September 7th, having been convalescent a few days previously.

Daniel N., aged 19, admitted, with *small-pox*, August 26th. Was five days ill on admission, and had not been vaccinated. The eruption in this case was confluent. He did not get wine, but he got beef tea throughout, and was convalescent August 31st, five days from admission.

Mary H., aged 10, admitted, with *small-pox*, September 4th. Was three days ill on admission, and had not been vaccinated.

On the 7th she got 2 ounces wine; and this was continued every day to the 13th. On the 14th she was convalescent, ten days from admission.

In this, and in the two preceding cases, I had the faces of the patients constantly covered with mucilage of starch, except for a few minutes each morning, when they were sponged off with tepid water to exhibit the true state of affairs, and to apply the starch afresh. Just seven years ago, when small-pox was prevalent in this city (Cork) and neighbourhood, I tried this application in several cases, in the General Hospital in Ballincollig, then under my charge, and I found that in each instance it allayed the sense of heat and itching so much complained of by the patients, and completely prevented their tearing the pustules from their faces.

In the *Dublin Hospital Gazette* for 1856,<sup>a</sup> I wrote a short account of this plan, and its excellence in small-pox, and other skin diseases of an inflammatory nature; and, having used it in the cases just now related, I am able to state that (whether *post hoc* or *propter hoc*) no personal deformity ensued.

Hannah P., aged 15, admitted September 1st, four days ill with what proved to be *erysipelas of the head and face*. In this case the mucilage of starch was also used with good effect. She was treated with Dover's powders, beef tea, and wine from 2 to 8 ounces.

She became convalescent September 11th, after a very severe and distressing attack.

Hannah S., aged 65, four days ill; admitted August 18th with general symptoms of *acute bronchitis*. She had beef tea, and 4 ounces wine daily, from the commencement of her treatment until the 27th, when she became convalescent.

She got no medicine, save Dover's powder and an occasional purgative.

Daniel H., aged 40, seven days ill; admitted August 23rd, with *acute bronchitis*.

This man had turpentine fomentations to the chest, Dover's powder, beef tea, and wine, not exceeding 4 ounces in the 24 hours. He became convalescent August 27th, four days from admission. His attack was not by any means a light one.

Jeremiah S., aged 17, six days ill; admitted August 21st, with pneumonia in both lungs; sputa viscid and rusty. From the 24th, when he came under my care, he got beef tea, Dover's powders, and frequent turpentine fomentations. On the 26th, 4 ounces of wine and Dover's powders, each reduced from 5 to 3 grains. On the 28th, wine reduced to 2 ounces daily. He became convalescent on the 31st. Chlorides present in the urine throughout.

Julia K., aged 15, eight days ill; admitted 20th August. This girl had a severe attack of continued fever, complicated with diarrhoea, which set in on the 24th. On her coming under my care, on that day, she got

<sup>a</sup> Vol. iii. (2nd Series), p. 72, &c.

beef tea and Dover's powders; and on the 25th, 4 ounces wine daily, until the 27th, when it was reduced to 2 ounces. She was convalescent on the 30th.

Richard R., aged 17, a stone-cutter by trade, 18 days ill; admitted, with typhoid symptoms, August 24th. This patient had the tongue of that red or raspberry colour peculiar to typhoid fevers. On admission he got a draught, with 2 drachms of tincture of hyosciamus; also 6 ounces of wine, and broth; he further got occasional Dover's powders.

On the 26th the wine was reduced to 4 ounces, and on the 28th to 2 ounces. He was convalescent on the 31st.

Mary M'C., aged 10, five days ill; admitted September 5th. This was a case of *maculated typhus*. From the 7th, she had 4 ounces of wine, and beef tea daily; also three grains of Dover's powder every six hours. 8th, 4 ounces of wine. 9th, 6 ounces of wine. 10th, Dover's powders every four hours.

The wine was gradually reduced to 2 ounces, until the 16th, when she became convalescent.

Eliza O'B., aged 22, four days ill; admitted 20th August. Up to the 24th, when she came under my care, she had been treated by a blister to the chest, and an expectorating mixture; also an aromatic mixture combined with camphor and tincture of hyosciamus.

This case proved a very severe one; there was extensive typhoid pneumonia in both lungs, also long-continued diarrhea, and great nervous depression, with slight abdominal tenderness on pressure. From day to day the case varied considerably, being one day apparently better, and the next worse.

I think it may be classed as one of typhoid fever, though the peculiar papular maculæ were not visible.

On the 24th I directed the camphor and aromatic mixture to be continued, and, in addition, that she should have frequent turpentine fomentations; beef tea; 4 ounces wine; and 5 grains of Dover's powder every third hour; 25th, 8 ounces wine; 27th, a mixture containing sesqui-carbonate of ammonia and chloric ether. September 1st, wine 6 ounces; 2nd, 4 ounces; 3rd, 2 ounces. This day I considered her convalescent.

Denis F., aged 38, a brewery labourer; admitted September 1st, having been previously four days ill. This case proved a very severe one, the patient being in the balance between life and death for several days; and I consider it to have been an example of typhoid fever for the following reasons:—

1. Pulmonic complications; he had typhoid pneumonia in both lungs.
2. Intestinal complications; he had continuous and copious diarrhea; the discharges being of the pea-soup colour and consistence.

3. The typhoid rose-coloured spots appeared September 9th, during the second week of his illness.

4. He had the tongue in the peculiar condition remarked on in the case of Richard R.

5. His delirium was only occasional, and not by any means of an apathetic character; he used to get up and commence to seek for his clothes, but, when remonstrated with, he quietly returned to bed again.

6. His general aspect was not at all dusky, but vivacious, and his eyes appeared glaring and excited.

The treatment consisted in giving him Dover's powders, beef tea, 4 ounces wine, and turpentine fomentations. September 4th, the wine was increased to 8 ounces; 5th, reduced to 6 ounces; 6th, 8 ounces; 7th, 10 ounces; 8th, 16 ounces; 9th, 2 drachms tinct. of hyoseyamus in a draught, with a glass of spirits; 10th, wine 16 ounces, two leeches to each temple, 3 drachms of tinct. of hyoseyamus in two doses of punch; in the evening six leeches behind the ears. 11th, wine 16 ounces, draughts as yesterday, in alcohol. 14th, 1½ drachm tinct. hyoseyamus in a draught of punch, and the same repeated in two hours. 16th, wine 16 ounces; draughts repeated. After this day the wine was reduced to 8 and 4 ounces, and the patient became convalescent September 20th.

Joseph H., a sailor, aged 35, six days ill; admitted September 10th. This I also consider to have been a case of typhoid fever. He had typhoid pneumonia from the outset, and diarrhea. The stools were nearly of black colour, were very frequent, and each discharge nearly filled the chamber vessel.

He had half a glass of punch on admission, and the wine given was from 8 to 16 ounces, and down to 2 ounces daily. He was convalescent on the 23rd.

I could not discover any eruption on the skin; nor had he the extreme nervous prostration and stupor of typhus.

Ellen A., aged 19, admitted September 5th, three days ill. This was a case of maculated typhus complicated with pneumonia in both lungs. The maculæ appeared on the 7th; on the 8th her face became suffused and dusky, and the tongue dry and brown.

She was treated on the supporting method; got wine from 6 to 16 ounces, and down again to 6 ounces. She was convalescent on the 19th.

Timothy H., aged 35, a brewery labourer, 14 days ill, was admitted September 5th, with well-developed *maculated* typhus.

This case, which was accompanied by the lowest possible amount of nervous depression, was treated by Dr. McEvers,<sup>a</sup> on the supporting method from the outset.

The day of admission he had 8 ounces wine, 2 ounces spirits, beef tea,

<sup>a</sup> My valued colleague, by whose kind permission I am authorized to make use of this and the following case.

and turpentine fomentation to the chest. The frequent complication of pneumonia occurred here also; and on 8th the patient is noted as having on the surface of the body, "maculæ, petechiæ and purpuraceous pots."

He was stimulated in every possible way, external and internal, and, after a hard fight, became convalescent September 19th, having consumed, besides beef tea and medical stimulants, 216 ounces wine, 89 of brandy and spirits, and 10 pints of porter, from September 5th to September 30th, the date of this note.

The external stimulants were also formidable; turpentine fomentations, sinapisms, and blisters were applied, as the unceasing attention and anxiety of his medical attendant directed; and I have not the smallest doubt, after careful watching of this case, that, had not the supporting method been adopted from the outset, Timothy H., could, humanly speaking, never have recovered.

Eliza K., aged 24, six days ill, admitted September 10th, with unmistakable diphtheria and cynanche tonsillaris. Dr. McEvers (under whose care she was), besides making her use a liniment of ammonia and stuping her throat, gave her two pints of beef tea, and 8 ounces wine. He also caused the muriated tinct. of iron to be applied to the internal fauces, gave her a gargle of the same tincture (2 drachms to 1 ounce of water), and 20 drops of the tincture in water, every four hours.

On the 14th the wine was reduced to 4 ounces; on the 15th the tincture was stopped; and on the 18th she was convalescent. While in the convalescent ward she threw up the diseased membrane, which she very clearly described as being "like the cover of a neats' tongue when boiled."

I suppose this may be considered an instance of what Dr. Jenner calls "the sixth variety," the asthenic form of diphtheria.<sup>a</sup>

On looking over the cases of continued fever noted in this paper, I think there is some fair ground for demurring to Dr. Jenner's theory of typhus and typhoid, proceeding from totally different poisons. While the typhus and typhoid types were clearly defined in some, yet in others the symptoms were so mixed as to lead to the conclusion advocated by Dr. Henry Kennedy:<sup>b</sup> that while the two types could generally be distinguished one from the other; yet, that to obviate all the difficulties surrounding the question, they should be considered as the result of a common poison. In the latter of his two papers, quoted below, he gives such a number of cases of the doubtful kind that there appears to be much force and originality of thought in the saying of Miss Nightingale,

<sup>a</sup> Diphtheria, its Symptoms and Treatment, p. 29.

<sup>b</sup> On Typhus and Typhoid Fevers, as seen in Dublin (read before the Royal Med. Chir. Soc., London, in May, 1860), and also, Further Observations on Typhus and Typhoid Fevers as seen in Dublin, Dublin Quart. Journ. Med. Science, Vol. xxxiv., p. 50., &c.

that we should not look on diseases as separate entities, like so many dogs and cats, but as varieties, or different phases of the same morbid change or condition.<sup>a</sup>

The alternative view—that any two of the fever poisons may coexist in the same individual, and each exhibit its special phenomena—appears also to be a probable explanation of these cases, especially if we can conceive that one poison may, to some extent, neutralize the other.

However this may be, I do not wish to convey the idea that typhus and typhoid (or enteric) fevers, are synonymous terms for one disease. The distinction is too evident to allow such an opinion; although there are yet many highly esteemed and observant practitioners who, looking on the clearing out of the bowels as the all-important object in typhus, and, at the same time, refusing to admit the existence of enteric fever, continue, in unmistakable cases of the latter, to purge the patients, and so in many cases retard their cure, while in some they prevent it altogether.

I shall conclude these cases by mentioning, that during the last two years I have treated various persons in private life on the principles here advocated, with considerable success. I particularly remember an instance of acute hydrocephalus, and a very distressing instance of cynanche tonsillaris in a clergyman; besides several others occurring in the ordinary course of things. When affected with pneumonia myself, about 18 months since, I was treated in like manner and with like success.

Now, while I utterly repudiate the old routine practice pursued in every case of acute disease—I mean bleeding, lowering treatment, and mercurialization—I equally repudiate the opposite extreme, the treatment of all acute cases with alcohol in large quantities. This practice, with the late Dr. Todd, seems to have been pushed to such excess that it became a routine, just as much as the ancient practice of bleeding for every disease; a plan still ruthlessly pursued with sick horses and cattle in our country districts.

In the cases noted in this paper there has not been—I hope it will be admitted—an undue administration of stimulants or alcoholic food. In some there was none at all, in others very little, and in all the dose was regulated by the symptoms most pressing at the time. The principle was neither entertained or acted on, that stimulants, in large quantities, and, as a matter of course, ought to be given in every acute case. But it is

<sup>a</sup> Since the above remarks were written, I had two cases:—One (W. D.), a lawyer's clerk, having all the prominent symptoms of typhus, except the maculæ; and a second, which is only now (December 10th, 1862), convalescent, after nearly eight weeks' illness. In this instance the patient (W. J.), a gentleman, aged 19, had all the plain and undoubted evidences of typhoid fever, except the spots. The first case was severe, but recovered under the treatment advocated here. The second was frequently believed to be dying; for weeks he may be said to have lived on wine, brandy, and spirits, proving, incontestably, that alcohol is food. To him it was *aqua-vitæ*.

very respectfully submitted, that the principle of support *versus* depression and mercurialization is a surer, shorter, and therefore a vastly better principle than the reverse.

At the same time it is not intended to deny—for it cannot be denied—that the plan, against which I argue, has, in the absence of clearer knowledge, had considerable success. But so it is with almost all modes of cure, from the time of Hippocrates to the present; at least so say the respective advocates of the various methods.

But in some respects the difference is more imaginary than real. Several, who wholly object to the *principles* laid down in this paper, find themselves compelled to treat acute diseases by support, to a greater extent as compared with their practice in former years. They say that the type of disease has altered; and that as inflammation is not now so strong as it was 20 or 30 years ago, so it does not now require the treatment adopted by a past generation.

But is this the case? is it wholly or only partly true? I think only partly.

We are very apt to fall into error respecting types of disease, when we take our impressions of them from the way in which they exist, or are said to exist, in London and other large cities.

The diseases in those towns are often quite different from those occurring under the same names in country districts.

While a London or an Edinburgh physician may say that acute disease is now more typhoid in its character than formerly, if he came into some of the country dispensary districts in this (Cork) county, which I could name from personal knowledge, he will find pneumonia just as acute now as it was represented to be by Cullen and Gregory; while in some parts of this (Cork) city it will be found to be of a depressed character.

Thus it is in a large city like London, that in the course of a few years the town extends, and so does the dirt; the population doubles; families are crowded together; the necessities of life become more difficult to be had, and of inferior quality; and the habits of the people are such that typhoid disease results, or, if you prefer it, ensues; whereas, if one of our peasants, living in a miserable mud cabin, gets pneumonia, he, by the aid of external country air, and the disinfecting turf-smoke of his residence, overcomes the effects of the pig's society inside, of the dung-heap and cess-pool outside, and, more marvellous still, of the surgeon's lancet, and soon recovers from, what most will admit to have been, as severe an acute attack as his father or grandfather ever had.

Further, I am ready to concede that essential fevers, and other acute diseases, are—not sthenic, or asthenic, but—more asthenic at sometimes than at others: for instance, in the recent epidemic fevers in this city (Cork, summer of 1862), the cases admitted to the Fever Hospital were, in general, of a much more depressed class than those admitted last year,

and so required much more wine than their predecessors. But that will not account for the fact, that in the very respectable library of registers preserved in the institution just referred to, during the last 60 years, the frequent recital of deeds of blood comprised in the quiet term "venesection"—that mandate which, it is to be feared, sealed the doom of many a patient—occurred largely, and, as a matter of routine, half a century since, whereas a lancet is now a most unusual visitor in the same place. On looking over one of the registers referred to, that for 1818, taken at random from among a large number, I find the number of patients for that year was:—males, 2,779—venesections, 571; females, 1,424—venesections, 485; that is, more than 1,000 persons were bled out of about 4,000.

In 1861 there were 608 persons treated in the same hospital, but there were not any venesections during that or the four preceding years.

The venesection cases of 1818 are recorded as mostly having "fever from contagion;" next in frequency "synochus" is mentioned, and also pulmonary affections. The cases treated there comprised then, as they do now, all acute diseases; that is, not only what we now call typhus, typhoid, and relapsing fevers, but all internal local lesions in which febrile symptoms were prominent.

A *partial* change or *moderation* in the use of blood-letting may be accounted for by saying, we are now in an asthenic cycle of disease; but as men are as strong now as men were 50 years ago, and as depressed types of disease are at all times to be found in debilitated or unsound constitutions, as in badly fed workhouse children, it cannot be maintained that all over the kingdom, for several years together, in good and bad constitutions, under all conditions of food and temperature, acute disease has assumed so low a type as to obviate the necessity of blood-letting, which was formerly not only the panacea for all ills, but even the periodical requisite of those who were specially remarkable for health and energy. The immediate relief following general bleeding in many cases, no doubt, kept up its use; and many a physician got a good name and blessings from the patient whose recovery he retarded, or perhaps altogether prevented, by that imprudent *indulgence*.

It is very curious to observe how opinions, which are deemed modern, turn out to be ancient enough. This bleeding and supporting question is now frequently referred to in our literary periodicals; thus, in an article on "Dean Hook's Lives of the Archbishops of Canterbury," in *Blackwood's Magazine* for July, 1861, speaking of the course of education pursued in the College founded by St. Augustine at Canterbury, the writer says:—"There were brave attempts made also to teach what we now call special subjects; and useful knowledge, music, astronomy, natural philosophy, and medicine, had each their turn. The music was good of its kind; of the natural philosophy and astronomy it can only be

said that they kept pace with the theories of the day; and medicine is still so much an experimental art among ourselves, that it seems quite possible that our own theory and practice may appear barbarous in the light of future discoveries, as that of the seventh century now does to us. If Archbishop Theodore declared it to be very 'indiscreet and unskilful to bleed a young lady on the 24th day of the moon,' he was so far a step in advance of most surgeons of the passing generation, who took the lancet ruthlessly in hand every day throughout the year; while modern science carries out the Archbishop's idea more consistently, and pronounces it indiscreet and unskilful to bleed at all in 99 cases out of 100."

The public importance of this question is further instanced in the following extract from an article on "Country Doctors," in the *Saturday Review* for September 7th, 1861:—

"It is significant that the equivocal name 'leech' has been conferred in common on the human and the reptilian practitioner; and if you were abroad you would realize its meaning to the letter." The writer of the article then refers to the death of Count Cavour, who had been bled six times in fever, and proceeds:—"In England you have no such fate to fear, even the country doctor has, in most places, got beyond the lancet. . . . When he administers a few thumping doses of calomel, and brings you to death's door, he experiences a feeling of pardonable exultation at being the possessor and recognised master of so potent a spell."

In the recently published work entitled *Clinical Medicine*, by Dr. Gairdner, now Professor of Medicine at Glasgow, the writer, who thinks that in some cases of pneumonia bleeding may be of use, that very small doses of tartar emetic may do in others, observes of his own practice:—"Calomel with opium (indeed mercury in any form) has been very little employed, having been given only in obstinately continuing condensations, and then only as an experiment, with great caution, and with, as I think, little positive result."<sup>a</sup> He does not look on alcohol as *food*, but as a *tonic* or *stimulant medicine*.

That it is *food* is, I think, well maintained in an excellent paper, entitled, "Does Alcohol act as Food," in the *Cornhill Magazine* for Sept., 1862, where the writer says:<sup>b</sup>—"Food, I take it, means anything which, taken into the body, will, unaided, keep it from perishing so quickly as it must in the absence of all sustenance;" and then proves his case by showing that, in certain diseases, alcohol, and that only, has sustained life for a lengthened period of time. Dr. Gairdner winds up his experience of pneumonia by this good advice:—"In all cases of doubt and difficulty, I have uniformly adopted the principle that nature is to be trusted to a great extent; believing that patients will recover much better and sooner under no active treatment at all, than under a routine treatment blindly enforced; or, in other words, that nature is a better manager than a

<sup>a</sup> P. 54.

<sup>b</sup> P. 322.

bungling physician, who has always an inexorable system in hand to control her operations.”<sup>a</sup>

But perhaps some one will say—what is the treatment recommended in the foregoing remarks but “a routine treatment, blindly enforced”? Does not the constant repetition of the phrase “Dover’s powders, beef tea, and wine,” in the great variety of acute cases just enumerated, bring the suggestions contained in this paper within the censure of Dr. Gairdner? With all respect, I think not. The objection lies really against the course of nature, or, more correctly, of disease, since several of the prominent symptoms (*ex. gr.*, those included under the term *pyrexia*) are in fact *routine* symptoms, being found in diseases of different name, character, and severity.

Thus, on the principles of treatment applicable to most acute diseases, laid down in the opening part of this paper, the use of Dover’s powder as a medical agent, cannot be called routine practice, any more than that of any other diaphoretic mixture. It is not one drug, like tartar emetic or mercury, but a most excellent combination; and is useful because of the ease of its administration, and facility of preparation in proper doses.

It was not given in all cases, nor in the same doses in any number of cases, similar or dissimilar; nor was it continued for the same length of time in any number of instances. The drugs composing it could have been made up in half a dozen different forms, into mixtures of different sizes, colours, and tastes, into pills, powders, and boluses; in which cases its use could scarcely be called routine. Nor was the use of wine routine either, as I have already fully shown; and I have previously explained that beef tea was given on the principle of support *versus* depression, and in quantities proportionate to the circumstances of each case. All this is surely a very different thing from the invariable treatment of pneumonia in the country districts *now*, and in the large towns 20 years ago. First, bleed your man *ad deliquium*; then either give him tartar emetic solely, mercury solely, or both; and let the patient, if he can, struggle against his disease, starvation, and all these depressants. Which of these plans is “no active treatment at all,” and which is “routine treatment blindly enforced?”

Our great philosopher,<sup>b</sup> writing of the “conjectural” in the art of medicine, observes:—“The lawyer is judged by the virtue of his pleading, and not by the issue of the cause. The master of the ship is judged by the directing his course aright, and not by the fortune of the voyage. But the physician, and perhaps the politician, hath no particular arts demonstrative of his ability, but is judged most by the event; which is even but as it is taken; for who can tell if a patient die or recover, or if a state be preserved or ruined, whether it be by art or accident?”

<sup>a</sup> P. 55.

<sup>b</sup> Lord Verulam, *Advancement of Learning*, Book ii.

Judge this plan by the *event*; it has been shown to be successful at any rate in several serious cases; and so long as those who object to it on principle admit the force of ordinary personal testimony, they cannot controvert the issue of the cases registered in this paper.

Let not any one who has tried it in one instance only, and found it unsuccessful, reason against it; it is illogical and invalid to reason *a particulari ad universale*.

Nor let any one assert the success of this system to be contrary to experience when he has never tried it, and resolves that he never *will* try it. He may plausibly argue against the *theory* here assumed; but unless he has been present at the treatment of the preceding cases, or of others similar, and has observed no such result as is here affirmed to have followed, he is, I respectfully submit, entirely disqualified, by all the rules of reasoning, from making any objection to the *practice* laid down in these observations.

To adapt to this subject the well-known lines of Horace, I may say, in conclusion:—

“————— Si quid novisti rectius istis  
Candidus imperti: si non, his utere mecum.”

*On the Treatment of Acute Diseases.* By PROFESSOR O'CONNOR, M.D.

THE followers of Pythagoras had two classes of opinions:—The one called esoteric, for the thoroughly initiated disciples; the other exoteric, which were adapted to the understandings of the general public. I have often wished that in medicine we had a similar practice, that the profession might be thus saved the scandal produced by the contradictions found in medical writings on some of the most vital questions. In the earliest times Hippocrates, the father of medicine, saw and lamented this evil, which he refers to in the following words:—“The whole art is thus exposed to much censure from the vulgar, who fancy that there is no such science as medicine, since in acute diseases practitioners differ so much amongst them, that those things which one administers as thinking it the best that can be given, another holds as bad.” One would suppose he was referring to the discussions which take place at the present day on the treatment of acute diseases; one party contending that these are to be treated by stimulants and sedatives, another by mercurials and antiphlogistic measures. I have been led to make these remarks by having heard the paper on this subject read, at the last meeting of our society, by Dr. Belcher, which, although written with great ability, contains doctrines that should receive the most mature consideration before being adopted by the profession.

Lest I should misrepresent Dr. Belcher's views I shall make no further reference to his opinions than to state, that he appears, by his practice, to

recommend the treatment of all diseases, inflammatory as well as essential fevers, by the one common form of sedatives and stimulants, a practice put forward lately in the writings of a few men of eminence, and which has been imitated by many of the junior members of the profession, I fear to the great injury of their patients.

It might be interesting to inquire why, after so many centuries of careful observation by the most enlightened minds, medical opinions should be still so unsettled on subjects of the most vital importance. The reason might be found in the impossibility of establishing any truth in medical practice by a strict induction. We should not exclude from our reasoning the various other causes besides medicines, which either retard or aid the cure—the influence of age, climate, season, the previous habits of the patient, his constitutional idiosyncracies, the constitution of the atmosphere as modifying the type of disease; above all that great power the *vis medicatrix naturæ* which aims at a restoration to health in every curable disease; and still, unless we can accurately estimate the influence of these forces, we can never be certain what share a medicine had in the cure of a disease, or whether the cure did not arise in spite of the treatment. Accordingly every new doctrine in medicine, whether the offspring of vanity, weakness of judgment, dishonour, self-interest, the love of notoriety, or of the gain which often follows it, or whether it arises from higher motives, is, in every case, introduced to the public, sustained by a number of successful cases. In this respect the quack and the scientific physician stand before the world on equal terms.

Still, I am sure the contradiction is more in medical writings than in medical practice. Men of good understandings, though holding opposite theories, seldom differ about the treatment of a particular case. When the life of an individual is at stake men, unconsciously, bend their theories to the true practice.

A reference to the writings of the father of medicine, Hippocrates, will show us that the profession were never left without a pure and true light to guide their treatment in acute diseases. In reading the opinions of this great man, we cannot help being struck with their moderation, the absence of all theorizing, his counselling a special treatment suited to each case, irrespective of all preconceived ideas. In all of which he contrasts most favourably with some few writers of the present day, who urge the adoption of a general plan of treatment for all acute diseases, and that, a treatment in direct opposition to the instincts of the patient and the opinions of the vast majority of the profession.

In speaking of the diet of the sick, Hippocrates says:—"It should be as different from that of the healthy as that of the healthy is different from the food of wild beasts." Is this distinction counselled by these gentlemen who recommend an amount of stimulants and nutritious food in the most inflammatory complaints, that would bring sickness on the most

healthy. Again, after giving directions for the preparation and administration of light diluent drinks, lest this system might be carried too far, he adds:—"In the constitution of man abstinence may enervate, weaken, and kill; and there are many other ills different from those of repletion, but no less to be dreaded, arising from deficiency of food. For one must aim at attaining a certain measure, and yet this measure admits neither weight or calculation of any kind by which it might be accurately determined, except it may be the sensation of its bad effects. Wherefore, we should strive to learn this accurately, so as not to commit small blunders, either on one side or the other." In this the physician is told that neither stimulants or starvation is the proper treatment for acute diseases, but there is a golden medium between these extremes which it should be his sole care to attain. On the same subject he says:—"A weak person is in a state nearly approaching to one in disease, but a person in disease is more likely to suffer if he encounter anything that is unseasonable." Speaking of the use of wine, his instructions are equally guarded:—"We must, in each case, determine whether it is to be given or not, and at what time, and of what quality." Again, "in protracted diseases pay attention to the exacerbations and remissions of the fever, so as to avoid the times at which food should not be given, and when it might be administered without danger." His instructions about bleeding are equally moderate, counselling it only "in acute affections, if the disease appear violent and the patient be in the vigour of life, and that he have strength. Abstract blood more or less according to the habits and ages of the patient." I am sure that principles such as these have guided the practice of the great body of intelligent physicians in every civilized country, notwithstanding the jarring of schools, both ancient and modern. Here we have neither the antiphlogistic nor stimulant plan of treatment recommended as a general practice, but the physician is counselled to study each case with care and without a rash confidence in himself, and then to determine what measures he should take for the restoration of his patient.

Seeing how strongly the writers to whom I have already referred condemn the use of all depletion in inflammatory diseases, substituting its opposite, namely—the strongest stimulants—and that they sustain their views by an appeal to experience as well as theory, it has occurred to me that some light might be thrown on this subject by referring it back to nature, as to a supreme court of appeal. All writers agree that in all acute diseases nature makes an effort at cure, at again restoring injured parts to their healthy condition; without this provision our organization would be very imperfect indeed. In the union of fractured bones, in the separation of sloughs and gangrenous parts, and of the dead bone in necrosis, we see the *modus operandi* by which these measures of safety are carried out by nature. Though not so obvious to the senses, nature's

cure is accomplished with equal wisdom in inflammation of the liver, lungs, or brain. If it be the design of Providence that injured organs should be restored to health by a paroxysm of disease, it follows that this object will be attained with the utmost wisdom, and that the patient will be placed in circumstances most favourable for its attainment. We find that, as soon as an inflammation of any important organ sets in, muscular debility soon follows, attended with prostration of mental energy, and thus the patient is, of necessity, condemned to repose of mind and body, just as we place a broken limb in splinters; and the physician as carefully enjoins the one as the surgeon practises the other. Next, the stomach, for the wisest reasons, is placed in sympathetic connexion with every organ of the body, even with the exercise of the moral and intellectual faculties, and at the commencement of inflammation all appetite for solid food ceases, and is replaced by a desire for diluent drinks. This is so invariable that it cannot be without its purpose, any more than the increase of appetite which attends on bodily labour, or on the rapid development of the frame. In the one case nature wishes to diminish, in the other to increase the quantity of blood. In the former all fresh supply of blood ceases, while diluents assist the liver, skin, kidneys, and bowels to remove the various excrements with the least distress to these organs. There is thus, in the first few days of an acute inflammation, a gradual diminution of the quantity of blood in the body, to a grater extent than the boldest phlebotomist would practise: just as the captain of a ship, when the storm arises, throws overboard whatever might encumber the movements of his vessel. It is impossible not to think that nature diminishes the quantity of blood, and renders it less rich in its quality to save not only the organ affected, but also the others which are endangered by the great perturbation of the system arising in an inflammatory fever. Why not respect the suggestions of nature in this as well as in the other instance? Should we not avoid opposing nature by the too early use of nutritious and stimulating food, even though we may not think it necessary to anticipate her by active depletion? It might be asked, when heat of skin and a quick pulse also attend on inflammation why should we, by depletion, diminish the one or the other; or, if they are parts of a salutary process, should we not rather increase them by the use of stimulants? To this it might be answered, that nature acts by general laws; and though in the main these attendants on inflammation might be salutary, in individual cases they might be in excess and require repression at the hands of the physician. The monsoon, like many other phenomena in nature, while it brings health to the many by purifying the atmosphere, brings destruction to some individuals. No physician attempts to reduce the pulse or heat of skin to the normal standard during inflammation; still he will, in many cases, be called on to moderate the one and the other. If he believes that the excitement is

so great as to endanger life, or to implicate other organs besides the one originally affected, it will be his duty to moderate it by abstraction of blood, by active purgative, or medicines calculated to weaken the force of the heart's action. The manner in which the physician is bound to follow the suggestions of nature is well illustrated in the practice of midwifery. Never is he more directly employed in saving human life than in this branch of the profession; still it is only rarely that active interference on his part is necessary. In this process—the most uniform, perhaps, in the animal economy—nature sometimes fails to accomplish her object; and we are successful in proportion as we justly appreciate this failure and follow exactly nature's mode of action in normal cases. When the membranes are too strong we rupture them at the time we find they would break in ordinary cases. We know the time the placenta would usually be forced away, and we remove it if delayed beyond that period. If internal hemorrhage be taking place, we stimulate the uterus by external or internal irritation, because we know that when the uterus was distended by clots it would itself contract and expel them. We use artificial means to extract the child, when we believe the efforts of nature are in vain. In all these cases we act as nature would act, and where she would act. It is the just appreciation of the necessity for interference and following the *modus operandi* of nature which distinguish the enlightened from the ignorant physician. If we watch the proceedings of nature in parturition are we not equally bound to attend to it in inflammations? Is it not the voice of nature that calls for cooling diluent drinks, and rejects the nutritive food and stimulants so agreeable to health; which calls for the refreshing breeze to cool the patient's body, and urges him to cast off his usual covering; shall we, in spite of these suggestions, continue to force on him food and drinks abhorrent to instincts, given him by Providence to aid his restoration to health?

Those who advocate the stimulant treatment in acute diseases are not so original as they may wish to think. Sydenham had to contend against it in his day; and it is still the favourite practice among the poor and ignorant in the country, who think a breath of cool air, a cold drink, clean sheets, or washing the skin, would bring ruin on their patient, and who never fail to ply them with whiskey punch "to bring out the disorder." Thus the false philosophy of the rich of one generation descends to the poor of the next, like their cast-off clothes and antiquated fashions. This practice was brought to its highest pitch of absurdity by the celebrated author of the *Brunonian* theory; but he, at least, had the merit of practising what he inculcated, for he always commenced his lecture by taking a glass of brandy and 60 drops of laudanum, and repeated the dose two or three times before its conclusion. It would be well if the modern advocates of this theory would try a full dose of their own remedy before administering it to their patients.

It is natural to expect that practitioners of the school referred to

should altogether object to bleeding. For them to practise it would be as irrational as throwing fuel and water into a fire at the same moment. Accordingly, we find it objected to—first, “because it could no more stop the progress of inflammation once begun than it could check scarlatina or the small-pox.” This is altogether a gratuitous assumption. We have positive proof that fevers run a definite course. We have equally positive knowledge that nothing is more uncertain than the duration of an inflammation, or the extent to which it may spread. As these conditions vary in different cases nothing but experience could determine whether they are affected by treatment. It is true, that “when exudation once takes place, nothing but a natural process will reorganize and remove it;” and the sole question in treatment should be, what state of the general circulation would most facilitate this process, and prevent the further spread of inflammation. Whether there is not a medium state between plethora and debility most conducive to the reparatory process, and whether we may be justified in diminishing the excitement in one case as much as we are in stimulating in the other. The opponents of bleeding admit the necessity of the latter; how can they ignore the former. Judicious bleeding does not lower the strength in the one case, more than nutritive food and stimulants increase the inflammation in the other.

We should also consider that our treatment is not entirely directed to the condition of the inflamed organ. Thus, if half one lung becomes suddenly impervious to air, and the circulation in it is arrested as in pneumonia, or an entire lung becomes compressed, as in pleuritis, the cavities of the heart become over-distended, the brain and other organs become endangered. Blood-letting alone can speedily remedy this evil, and restore these organs to a healthy condition, though it should not be able to arrest the inflammation in the part first affected. As theory cannot completely solve this question, we are again driven to the test of experience; and we have for its advocates the great body of medical practitioners, from Hippocrates to the present day, differing from each other solely as to the extent to which this treatment should be carried. I shall repeat Hippocrates’ maxim:—“Bleed in acute affections, if the disease be violent and the patients be in the vigour of life, and that they have strength; and then abstract blood more or less according to the habit and age of the patient.” Is not this the doctrine and practice of all the sound practitioners of the present day? who, distinguishing essential fevers from inflammation, consider that the former require support with very moderate, if any depletion, while the latter requires depletion with very little support; and that occasionally the treatment might have to be reversed, as when inflammation arises during the progress of fever, or when debility accompanies inflammation from its commencement, or arises subsequently. Our principle should then be to direct our practice, irrespective of theories, to the individual case, the cure of which is the paramount object of both.

*A Contribution to the Normal and Pathological Histology of the Kidneys.* By V. RASMUSSEN, Candidate in Medicine and Surgery. Translated from the *Bibliothek for Læger* for April, 1862. By WILLIAM DANIEL MOORE, M.D., T.C.D., M.R.I.A., Honorary Member of the Swedish Society of Physicians, of the Norwegian Medical Society, and of the Royal Medical Society of Copenhagen.

ALTHOUGH it cannot be asserted that cellular pathology is the only true and absolutely valid doctrine, inasmuch as it cannot be denied that, carried out to its ultimate result, it too much loses sight of generalization, and does not knit together all details into a higher organic unity, yet it may be said that it is the culmination of our present knowledge. Even the Vienna School, which, with its postulates and arbitrary interpretations has so long ruled science, has been obliged to bend before the numerous incontrovertible facts, supported on an exact genetic observation—for precisely this is the main strength of the new doctrine—and has quite recently begun to forsake the beaten path of authority and tradition, to turn more to the objective matter-of-fact method. Cellular pathology teaches us to separate the several tissues which compose the organs, and, in morbid processes, to investigate which tissue is the affected one, in order subsequently to estimate and name the disease; hence it is clear that a knowledge of these tissues, and of the elements composing them, as well as of the mode in which they are arranged to form the several organs, is a necessary condition for the comprehension of their pathological changes. As it is, therefore, my object in these pages to give a sketch of the histological relations in certain renal diseases, it will probably be found advisable, first, to direct attention to the normal anatomical conditions, especially to such as are important to us in the appreciation of morbid processes in these organs.

*The Renal Vessels.*—The striking difference found in the latter stages of the so-called Bright's disease, between the perfectly anemic cortical substance and the strongly hyperemic pyramids, led Virchow to institute some investigations respecting the vascular distribution in the kidneys, as this frequent and almost constant pathological condition was manifestly opposed to the doctrine first promulgated by Bowman, and subsequently adopted by Kölliker. As is well known, this was to the effect that all the blood, brought through the renal artery to the kidneys, with the exception of that circulating in some inconsiderable branches to the investing connective tissue, does not reach the veins without having passed the Malpighian bodies. That the latter are supported everywhere upon the extreme ramifications of the renal artery (*vasa afferentia*), and from them emerge the efferent vessels, which are differently disposed of. That while, namely, by far the greater part of them pass, after a short course, into an

ample capillary net-work encircling the convoluted tubes, those springing from the glomeruli lying nearest to the pyramids pass over into the so-called arteriolæ rectæ. That the latter, which are of considerably greater calibre than the other efferent vessels, enter into the pyramids, and run between the straight canals, dividing, at acute angles, into smaller branches, running, however, in the same direction—which finally, towards the apex of the pyramids, pass into an extended capillary net-work; during this course they, at the same time, give off branches inwards, which form a net around the straight canals, anastomosing with capillaries of the cortical substance.

In opposition to this theory, Arnold, Hyrtl, and Leydig assume that the arteriolæ rectæ spring directly from the main branches of the renal artery. Virchow's views (*Archiv für Pathol. Anat. und Phys.*, Bd. 12) combine both these opposite propositions; inasmuch as, according to him, the arteriolæ rectæ are formed—1, of branches issuing directly from the renal artery (main trunks—*arcus vasculosi*); 2, of vasa efferentia of the glomeruli situated next to the base of the pyramids; and lastly—3, of capillary outrunners from the cortical net-work. According to Virchow there is, at the boundary between the cortical substance and the pyramids, a neutral space, where the arteriolæ rectæ still form glomeruli, while the vasa efferentia send out lengthened off-shoots, which in general pass over into the capillary net-work of the pyramids, but sometimes both to it and to that of the cortical substance; and as the latter afferent vessels, proceeding from the arteriolæ rectæ, are most frequently very short, it may seem as if the arteriola recta itself, which, in reality, only runs past the glomerulus, were the efferent vessel. As to the distribution of the large vessels, the larger branches of the renal artery appear, through the columnæ Bertini, constantly giving off branches, which most frequently are regularly dichotomous, and which in flat arches (*arcus seu fornices vasculosi*) shoot through the outer part of the base of the pyramids, and thence obliquely up through the neutral zone, in order, finally, about the middle of the pyramids, to meet—though without anastomosing—with a corresponding branch from the opposite side, and to ascend in the cortical substance. These *arcus vasculosi* are to be considered as trunks, which now again give off branches, whereof by far the greatest part proceed from the convexity, and ascend directly or obliquely in the cortical substance between its several lobes. These branches, the so-called interlobular arteries, give off afferent vessels, which, as Virchow first demonstrated, do not arise at an acute angle, but in general form more or less backward curved arches; that is, in irritation of the papillæ, a circumstance which we shall subsequently see is of essential import. From this view it therefore follows that the cortical substance and the pyramids have a circulation independent of each other; the pathological state just mentioned, which, according to an older theory respecting the

vascular distribution in the kidneys, was inexplicable, has now found its natural simple explanation: if the blood, from any cause, becomes obstructed in its free entrance into the cortical substance, a compensatory congestion of, or determination to, the pyramids takes place, and *vice versa*.

The veins, of course, pass, for the most part, into the renal veins, but the peripheric veins are at the same time connected with the renal capsule, and through it with the *venæ azygos* and *hemi-azygos*, a circumstance which is easily demonstrated by drawing away the capsule in cases of venous hyperemia; the connexion takes place through the *stellulae Verheyinii*, which in such cases are distinctly apparent; and, on more accurate examination, the torn branch is easily found.

*Renal Parenchyma.*—The whitish striae in the pyramids, which give the latter the characteristic feathery appearance, correspond to ramifications of a single urinary canal opening upon the papilla. These, the so-called Ferrein's pyramids—properly speaking this name does not belong to them, but in modern nomenclature they are most frequently so termed—everywhere tend, and also in the *columnae Bertini*, towards the cortical substance; but in entering the latter the several canals, hitherto running parallel to one another, curve in a centripetal direction towards the sides, and make, in irregular windings, for a glomerulus; meantime the original pyramid becomes more and more slender; and, after having passed through about two-thirds of the cortical substance, it ceases, and thenceforward to the surface of the kidney only tortuous canals are found. In this mode, therefore, conical figures of straight canals also are formed, with the base towards the great pyramids; and it is, properly speaking, to them that the name Ferrein's pyramids applies. Such a pyramid, with its series of tortuous canals, constitutes a renal lobule. A section, carried perpendicularly to the axis of the latter, will therefore present very different appearances in the several points: towards the surface of the kidneys purely tortuous canals; internally, towards the pyramids, predominatingly straight ones; and transitions between these two. When we have, in the usual manner, by a section parallel to the axis, obtained a smooth section of the kidney, we often see these lobuli bounded by reddish striae (*vasa interlobularia*); however, these vessels do not form actual boundaries, they are only like isolated partitions, met with at a distance from one another; but, where these are wanting, the lobules, and therefore the tortuous canals, are in immediate contact with one another. The case is here the same as with the acini of the liver, with which, on the whole, the lobules of the kidney may be compared, for there, too, the net-works of hepatic cells are separated from one another only by the vessels and the connective tissue accompanying them.

This is, so to speak, the coarser anatomy of the kidneys, so far as it goes, which, on more accurate investigation, is easily observed in the smooth

section. In addition it may be stated, that on both sides of the interlobular arteries glomeruli are seen as small clear points, arranged in series. The renal parenchyma must, in order to be called healthy, not allow the individual urinary canal to appear too prominently, and it must be half transparent. Kidneys presenting such perfectly healthy parenchyma are very rarely seen on section, when death has not occurred suddenly, or, at all events, after a very short illness; most frequently there is a change, though only a slight one, of the epithelium in the renal canals, especially the tortuous ones, which gives them a dull whitish-grey appearance, and makes their outline appear more marked.

As to the more minute examination of the urinary canals and glomeruli, their membrana propria is in general said to be structureless; and this is in fact the case, although Beer (*die Binde-substantz der menschl. Niere*, Berlin, 1859) says he has demonstrated minute ramified corpuscles of connective tissue in them; here and there nuclei are found enclosed in the doubly contoured membrane. The tunicae propriae, freed from the epithelium, have a tendency to form fine folds, especially in a longitudinal direction, a circumstance to which Kölliker has already called attention; and this it is which has led Beer to assume the existence of corpuscles of connective tissue in them, the more so as the carmine, used in the investigation, readily adheres to such points, and thus makes the appearance still more deceptive. The epithelium on the inside consists of polygonal cells, with a large round, sharply contoured, granular nucleus, which, especially in children, is remarkably large, almost completely filling up the cell; rarely do we observe cells with two nuclei indicating a division. That the cells are polygonal, and in general have no outlets, can be proved by treating them with a weak solution of nitrate of silver and solution of salt, a method which has recently been employed by v. Recklinghausen, and whereby he has shown, that in all kinds of epithelium, there is a connective tissue between the individual cells, which is coloured black by the precipitated chloride of silver. By this mode of treatment the epithelium at present under our consideration exhibits acute, black, polygonal boundary lines; where it has been supposed that ramified epithelial cells have been met with in healthy kidneys, this appearance may possibly depend upon the fact, that portions of the connective substance have remained adherent, as fine filaments, to isolated cells. Such isolated cells, furnished with outlets, were seen by Beckmann in slight forms of nephritis. This connective substance is tolerably strongly developed in the renal epithelium, on which account the cells adhere firmly to one another, and, indeed, often separate in complete tubes from the membrane. The contents of the cells are finely granular, and are readily clarified by acetic acid; the enveloping membrane is exceedingly fine and slender. Wittich has, it is true (*Virchow's Archiv*, Bd. 10), endeavoured to deny the existence of the

membrane, considering these epithelial cells, which he connects externally with the urine, and internally with the blood-vessels, as nuclei surrounded with a highly albuminous protoplasm. Although the membrane can no longer be considered as essential to the formation of a cell, it is easy to prove that a distinct membrane is here present. Thus, if we treat the cells with water, they will endosmotically take up the latter, and become distended; but it is at the same time evident that a limiting membrane exercises a resistance against this distension, and, when the intercellular pressure becomes too strong, breaks. This endosmotic action makes it necessary, in examining the urinary canals, to use a solution of sugar, or some such concentrated fluid, instead of water.

This precaution is the more important, as precisely the largeness of the cells, and the consequently diminished calibre of the urinary canals are often the first indication of nutritive disturbance. On the other hand we may, by means of water, separate whole portions of urinary canals from epithelial cylinders; in the latter, namely, the cells will not be hindered from becoming distended outwards, and from so, instead of the smooth cylinder, producing an uneven one. In general, with the exception of those next the papillæ, the straight canals are of less calibre than the convoluted ones, but still their cavity is comparatively larger; this depends on the fact that the epithelial cells are flatter, while those in the convoluted canals are both larger in circumference, and also project more, protruding into the cavity of the canal. These last have, to a certain extent, more similarity to the epithelium of the glands; the first, to that of the excretory ducts of the latter.

The glomeruli are surrounded with a membrane with longitudinal nuclei, resembling the tunica propria of the urinary canals. The epithelium on the inside is not always easily perceptible; it has been supposed that it was continued over on the vascular loops themselves, but this is scarcely correct. The capsule has a tendency to separate; sometimes it is seen still adherent to the glomerulus, sometimes it is quite free, especially towards the edge of the section. Under the microscope the glomeruli, in general, present themselves in a rosette form, inasmuch as we do not see the whole course of the capillary loops, but only their convexity; out towards the edge, especially where the capsule is absent, the bulgings of the individual capillaries are seen, often containing small shining bodies (blood cells). Such bulgings may resemble cells; they call to mind the depressions on the capillaries in the pulmonary cavities, which also have been taken for epithelium. On the addition of acetic acid numerous nuclei appear, which for the most part belong to the capillaries; if the observer has been so fortunate, which is, however, very rarely the case, at the same time to get the vasa afferentia and efferentia, he will see their transverse nuclei. According to Beckmann's

investigations (*Virchow's Archiv*, Bd. 20), which agree with Key's, the proper glomerulus, and, therefore, the vascular loops, are, at least in children, not constantly in adults, surrounded by a slight membrane of connective tissue, studded with stellated or fusiform cells, which in part lie immediately on the surface, and partly press in between the several vascular loops.

*The Interstitial Connective Tissue.*—This is of great importance in pathological anatomy; in the ordinary manuals of histology but little attention is given to it, or the nature of the tissue is misunderstood. If we examine a thin section of the kidney under the microscope, the epithelium having been previously, so far as possible, brushed off, we shall see the several openings of the urinary canals bounded by a slight transparent line (the tunica propria). It is evident that the transverse section of the convoluted canals will present all kinds of different forms, but the straight canals also will be met with under very various circumstances, at one time more perpendicular, at another more parallel to their axes. Now, as even the thinnest section always has a certain relative thickness, and every divided canal has a superior and an inferior opening, which, most frequently, do not cover one another, a careful application of the microscope is necessary to avoid false conclusions. To illustrate this more precisely, let us for a moment suppose a urinary canal ascending obliquely into a section, to the lower opening of which canal the microscope is applied. If we now compare this with the nearest adjoining urinary canal, whose upper opening alone we possibly see, or at least use as a means of comparison, the distance between the two canals will seem considerably greater than it really is, since the wall of the obliquely ascending canal will be taken as a distance, as the eye must assume that the two openings lie in the same plain. The image becomes still more deceptive from the fact that the nuclei of the capillaries, encircling the urinary canals, appear through the thin wall, and are mistaken for nuclei belonging to the connective tissue. If, on the contrary, we raise the tube of the microscope a little we shall see the two openings approach more and more, and the actual distance first becomes apparent when the superior opening of the oblique canal lies accurately in the focus. Simple as this circumstance is, and easy as it is to demonstrate it in a diagram, it is equally easy to overlook it in practice. The distance between the several urinary canals is, in fact, very small. If we examine the drawing in *Kölliker's Gewebelehre*, (Third Edition, p. 205,) it is almost certain that the great distances to be found in most places between the urinary canals depend on such an inclusion of the wall; and when it is in the same place also stated, that the nuclei lying between the canals all belong to connective tissue, this must depend only on an accidental inaccuracy. It is, on the whole, a fault, that almost all drawings in the histological manuals are more or less diagrammatic; they ought to be either purely so, or perfectly true to nature; anything intermediate is only confusing.

If a person commences his microscopic studies by seeking for the corresponding images in nature he will soon lose all pleasure and courage in his labour if he does not know how to estimate the meaning of such a drawing. The proper interstitial connective tissue has been first definitively demonstrated by Beer. It is found both in the cortical substance and in the pyramids, but in greatest quantity in the first named. It consists of a hyaline intercellular substance, lying around the urinary canals, between these and the capillaries, with interspersed stellated and fusiform elements. It is more abundant in children than in adults. These investigations of Beer have recently been confirmed by Smidt (*de Renum Structurâ Questiones*, Göttingen, 1861—*Henle und Pfeufer's Zeitschrift*). This interstitial tissue stands in the vessels in connexion with the external thin layer of connective tissue already described by Kölliker, which gives the kidney its smooth surface, by filling up the inequalities which the highly convoluted and bulging urinary canals would otherwise form. In order clearly to demonstrate this interstitial connective tissue it is necessary to inject the kidneys, and to brush away the epithelium; by this the nuclei in the capillaries, which are inseparable from the connective tissue, are removed; finally, if the preparation be treated with carmine, the elements of connective tissue will become more distinct. In employing carmine, weak solutions must be used—a couple of drops of an almost saturated solution of carmine in ammonia to the ounce of water. It is best previously to moisten the preparation with a little spirit of wine or dilute chromic acid, whereby the albumen is precipitated and the colouring is promoted; the nuclei are coloured, afterwards the entire cells, and for this several hours are required.

*Of the Pathological Changes in the Kidneys, which are referable to the term  
Morbus Brightii.*

In studying renal diseases, the object of our investigation is to establish the three following principal points:—1. What tissue or tissues are affected (vessels, parenchyma, or interstitial connective tissue); 2, whether only the cortical substance or the pyramids are attacked, or both together; and lastly, 3, whether the affection is partial or diffused. In the commencement a definite tissue can always be indicated as the starting point of the affection; later this is most frequently not possible; the several tissues are dependent on each other, so that they are often consecutively attacked; but, on the other hand, the several lobuli possess also independence of each other, and we have already seen that the vascular system of the cortical substance and that of the pyramids are to a certain extent independent of one another. It is especially chronic affections of the kidney which will be the subject of our consideration in an anatomico-pathological point of view. Formerly these were comprised under the name of *Morbus Brightii*,

but this is a very inaccurate denomination, and one which conveys but little information. The older investigators properly included under this term only what we now call parenchymatous nephritis, whose terminal stage is the characteristic and striking granular atrophy. Although this form is by far the most frequent, modern researches have revealed other pathological changes in the kidneys, which clinical physicians have not yet succeeded in definitely diagnosing from the parenchymatous nephritis; and it becomes, therefore, necessary to refer these also to the designation *Morbus Brightii*, so far as such a name shall be retained as a common denomination for these extremely different conditions. The essential symptoms are the albuminuria and the diminished secretion of urine, while the so-called fibrin cylinders have not the signification which Frerichs ascribes to them; they occur, at all events, only in the parenchymatous nephritis, and not even constantly in that. Here are three essentially different affections to be considered, each occupying its own tissue:—1. The amyloid degeneration of the kidney; 2, the parenchymatous; and 3, the interstitial nephritis. They may complicate one another; nay, all three may be present at once; sometimes one, sometimes another occurs first, but the parenchymatous is most frequently the primary affection.

*The Amyloid Degeneration of the Kidney.*—Unlike the liver, and especially the spleen, where the amyloid degeneration most frequently can, with perfect certainty, be established microscopically, and without having recourse to the reaction, the amyloid kidney is, in the rarest possible cases and that only in the highest degrees of degeneration, to be recognised in that way, and never with absolute certainty. The reason of this is, that in the first named organs, the proper parenchyma is chiefly affected, in the liver the hepatic cells, in the spleen either the follicles (sago-spleen) or the pulp (waxy-spleen), while the affection has a much greater extent than in the kidneys, where as a rule it is limited to the vessels, and does not spread to the proper parenchyma. It is, therefore, difficult to give definite non-microscopical anatomical diagnostic signs, particularly as the disease scarcely ever occurs alone, but is most frequently combined with a parenchymatous or interstitial nephritis, or, what is not unusual, with a result of this last, the interstitial fatty kidney. This latter combination is not unfrequently met with in individuals who have succumbed in the later stages of syphilis; but in what relation the two affections stand to each other is difficult to decide; probably they are collateral, dependent on the same etiological element, as they do not necessarily go together; for under similar circumstances, we at one time meet amyloid, at another interstitial fatty kidney. It is true it is not syphilis as such, but the dyscrasia which it, or the mercury, that is most frequently employed, produces, which is the cause; consequently it acts upon the kidneys in the same mode as chronic wasting diseases, especially chronic affections of the bones, tuberculosis,

&c. In the vast majority of cases the affection is met with in a great number of other organs, particularly the liver, the spleen, and the intestinal canal, and so produces death. As to the characters assigned to the amyloid kidney, much importance is not to be attributed to them. The Vienna School has indicated a solid consistence as something essential; but this is often not met with; also the lardaceous or waxy appearance—hence the name lardaceous or waxy kidney—but precisely in the kidney which exhibits such an appearance, we will often in vain seek amyloid, while it may be found in others which have only the appearance of being the seat of parenchymatous or interstitial changes. Yet it cannot be denied that in extreme degrees of degeneration we may even, with the microscope, acquire a suspicion, approximating to certainty, of the presence of amyloid. We then see the glomeruli stand sharply out as enlarged, shining, prominent bodies of a whitish-grey colour; the same appearance is presented by the vasa afferentia and other arteries accidentally lying in the surface of section. But the only certain and decisive sign is the reaction, which ought never to be omitted, when we have the least suspicion of the presence of amyloid. If we pour a small quantity of tincture of iodine on such a kidney, and rub it with the finger over the surface, we will see the glomeruli and the vessels assume a wine-red characteristic colour. The seat of the degeneration is the vessels alone, and the question is then, what vessels are attacked, in what order, and in what manner. It is chiefly the small vessels; first and foremost the glomeruli and vasa afferentia, next the vasa efferentia and the capillaries in the cortical substance, and finally, the arteriolæ rectæ are also attacked; it is rarely that the large vessels in the cortical substance and the main trunks of the arteriolæ rectæ degenerate. It is very long before any other tissue is attacked, and most frequently this does not occur; only in very rare cases does the affection extend to the tuniçæ propriæ. The change consists in the deposition of a substance in the walls of the vessels, rendering them thickened, rigid, shining, and diminishing their calibre. This substance, the amyloid, penetrates the several elements, destroys their structure, so that the characteristic texture is changed, the whole becomes, in fact, a structureless, homogeneous mass. The glomeruli become pale, void of blood, shining, and this almost asbestos-like lustre is extremely characteristic; frequently in the very slightest degrees of the affection a single such shining loop of vessels is seen. By reason of the change in the glomeruli, and the thence resulting diminished supply of blood, the cortical substance also becomes anemic, while the hyperemia increases in the pyramids. Hemorrhages, too, may arise in consequence of the increased pressure on the rigid inelastic vascular walls, and we therefore not unfrequently find reddish or brownish streaks and spots, corresponding to the blood extravasated within or externally to the urinary canals. The colour is of different shades, according as

the blood is fresher or has undergone changes, especially in its pigment. The amyloid degeneration is always bilateral.

There is, however, another kind of change in the renal vessels, which is not due to amyloid degeneration, but which, in the same manner thickens the walls, and makes them less permeable, and therefore deserves to be mentioned here. It is a change corresponding to the so-called end-arteritis such as is so frequently met with in the larger vessels. We here also find two different results: arteriosclerosis, produced by the organization of the newly formed elements, and atheromatous degeneration by a fusion of the latter in fatty degeneration. The first is met with particularly in the larger vessels, but it may extend even to the glomeruli; the second is most frequent in the glomeruli and the smaller vessels. This change in the renal vessels does not always coincide with a similar affection of the larger vessels, especially the aorta, but it does so in the great majority of cases. It is only the proper fatty degeneration we shall consider more particularly in its different stages. In the commencement, an increase of the nuclei of the capillaries is seen; these divide, move farther from one another, and thereby elongate the several loops in the glomeruli without at the same time increasing their calibre; as the exciting cause of such a hyperplasia, cellular pathology has, as is well known, assumed an irritation; of what nature this is cannot be definitely stated, probably it proceeds from the blood. At this stage the process may be stationary. If, however, it advances farther, small, finely-divided fatty particles begin to show themselves around the nuclei, and this always indicates a destructive character; these fatty granules increase, the nuclei disappear, and in their place we find an aggregate of fatty molecules. Thus a whole glomerulus may degenerate; and this must, of course, produce the same effect as the amyloid degeneration—diminished permeability and transudation, with a tendency to rupture of the walls. Dissecting aneurism, such as we so frequently see in similar changes in the cerebral arteries, is here much rarer. Such a fatty degeneration of the glomeruli may acquire a microscopic similarity to amyloid, the glomeruli becoming enlarged and of a greyish white colour. The reaction and microscopic examination together will remove every doubt. Instead of the smooth, shining glomeruli are seen, by transmitted light, dark, irregularly formed, scattered or continuous fatty masses lying in the course of the vascular loops.

A few words more about the reaction so often spoken of; for its correct employment is of the greatest importance in answering the question whether amyloid is present or not. In many cases the affection is mistaken, because the test is inadequately applied, and for the same reason—for the observer is unwilling to throw the blame on himself—it has been attempted to deny to the reaction the importance it really possesses. With iodine the amyloid parts are coloured of a beautiful

wine-red, with a slightly violet tint; the colour has some resemblance to that of blood; and such an artery treated with iodine may appear as if it were filled with blood. We, in general, use iodine, dissolved in iodide of potassium—tincture of iodine evaporates too rapidly—but a dilute solution, often presenting only a slightly brownish colour, is sufficient; if the solution is too strong it attacks the whole tissue, rendering it strongly brownish and opaque; with weak solutions we are able to act almost exclusively on the amyloid parts; and the strongly wine-red colour then comes out exceedingly well marked, in contrast to the light iodine colour of the rest of the tissue. One or more drops of the solution of iodine should be applied to the preparation, over which a needle or delicate scalpel is to be passed, so as to cause the iodine to penetrate better. As is well known the iodine evaporates rapidly, it must therefore be repeatedly renewed, that already applied being removed with a dry brush or bibulous paper. When the iodine and sulphuric acid reaction has succeeded well it should not give any pure blue, or, least of all, a bluish-black colour—for then the sulphuric acid has had a destructive action on the tissue—but a beautiful violet, somewhat tending to a bluish colour. A successful preparation presents a very beautiful appearance of the structure of the kidney; we may succeed in seeing a larger or smaller portion of an interlobular artery with its afferent vessels, and the glomeruli appended to these of a splendid violet colour, so that we might suppose we had injected the kidney itself. Unfortunately the colour is more beautiful than durable; even if we take ever so much trouble to preserve it and carefully cement the preparation, in the course of a few days the colour will have disappeared in consequence of the evaporation of the iodine. The following is the process:—The preparation, which has been treated with iodine in the manner detailed above, is freed from the superfluous fluid and covered with a glass; to the edge of this a very small drop of concentrated sulphuric acid is applied, and the preparation is laid aside for some hours, or a whole day. These are the original directions given by Virchow, and to which he still adheres. However, we rarely obtain, in this mode, very beautiful preparations; in some places the acid has acted too strongly, in others too feebly. With some practice and a little dexterity we can, by gently passing a glass rod, moistened with sulphuric acid, over the preparation, without actually touching it, quickly produce very beautiful results. The chief difficulty is to get the sulphuric acid to act in a concentrated form, and in the smallest possible quantity. Still it must be observed that the preparation ought to be examined while fresh; if it be one or two days old a beautiful colour is never obtained—it becomes of a dirty greenish; on the other hand the reaction succeeds well in preparations which have been preserved in spirit or chromic acid.

*The Parenchymatous Nephritis.*

Although the relation of the epithelium of the renal canals to the

urinary secretion has not been satisfactorily explained, it is nevertheless certain that it plays a part; still the importance of the epithelial cells for the secretion is not uniformly great, which is due to the different structure they exhibit in different places. It has already been mentioned, in speaking of the anatomy of the urinary canals, that the epithelial cells in the convoluted canals, especially in those which lie next to the glomeruli, and therefore first come in contact with the secreted urine, are larger and richer in albuminates, and correspond most closely to the epithelium of glands, while those in the straight canals are flatter and poorer in contents, and resemble the epithelium in the excretory ducts of glands. Under pathological conditions, too, there is a difference in the importance of the epithelium; a disease which attacks the first-mentioned epithelial cells, and renders them inactive, produces a change in the urinary secretion, and thereby acts injuriously on the economy of the whole body, and becomes dangerous to life; if, on the contrary, the process is confined exclusively to the epithelium of the straight canals, only abnormal constituents are mixed with the urine, the secretion itself is not interfered with, and such an affection is consequently of much less importance. We have, therefore, under the parenchymatous nephritis, in the more extended sense of the term, two different processes to consider: the papillary catarrh, which attacks the epithelium in the straight canals, and the proper parenchymatous nephritis, which attacks the proper parenchyma, or that which is of importance to the secretion.

*The Papillary Catarrh*, or catarrhal nephritis, is tolerably frequent, although not so frequent as the bronchial catarrh, with which it may be compared. It is often continued from the bladder, or even from the urethra, though it may also derive its cause from within, as after the use of cantharides and acid diuretics. It is frequently complicated with parenchymatous nephritis; and possibly the affection, slight in itself, is then the starting point of the more important parenchymatous process, in the same manner as an ordinary bronchial catarrh, when long continued, may become the source of more serious affections, as tuberculous peribronchitis and broncho-pneumonia. In hard drinkers, in whom this combination of papillary catarrh and parenchymatous nephritis is often met with, this is perhaps the case, for alcoholic drinks also may, by continued use, give rise to chronic papillary catarrhs; yet, in these, the parenchymatous nephritis may also depend on the general disturbance of nutrition, from which such persons suffer. The seat of the affection is, as has been observed, the straight canals, and especially the papille. Here a whitish or slightly yellowish, somewhat shining striation is seen, corresponding to the course of the urinary canals; and, by the side of this, hyperemia is observed in the intervening vessels. On pressure, a more or less abundant quantity of a milky or creamy fluid

flows from the openings in the papillæ. In those cases where the disease is produced by cantharides or such like acrid matters, great hyperemia and ecchymosed spots are observed over the whole kidney, both on the surface and in the parenchyma itself. If the disease lasts longer, the distended urinary canals exercise a pressure on the vessels, the hyperemia diminishes more and more, and at last is seen only as a wreath set around the base of the pyramids. As to the peculiar nature of the disease, it is certain that in many cases it is limited to a production of cells and exudation of the latter, mixed with mucous catarrhal products; in these cases, Johnson's name of desquamative nephritis is very suitable; but the process cannot be compared to the desquamation of the epidermis, as in scarlatina, for this is the termination, the former the commencement of the affection. But it is, on the other hand, also indubitable, that a process similar to that which takes place in the proper parenchymatous nephritis may exist, with fatty metamorphosis and destruction of the whole epithelium. This occurs especially in the more acute, and, if we will, more degenerated cases, such as is not uncommonly observed in cholera, ichorous infectious diseases, and severe croupy pneumonia. Microscopic investigation will afford different results in consequence hereof. In the first case we shall find the dilated and bulging canals filled with a quantity of cells, with all the signs of an abundant production; in some we see a round, in others a more extended nucleus, as if on the point of dividing, and in others again we observe two or three nuclei. In two cases of papillary catarrh in children I saw at the same time ramified cells—the only case in which I have met with such; some of them closely resembled multipolar ganglionic cells, and the contents extended into the offshoots; others were more fusiform or club-shaped, running out into a long, delicate thread. Where several such cells lay together it gave the idea as if these different forms had arisen from lateral pressure caused by the abundant production of cells. The cells in the continued parts are in general very small, yet they never acquire the characteristic form and appearance of proper pus cells; in some pigment is seen, in others small fatty granules, just as in other catarrhs. Mucous products are deposited in the urinary canals also as soft, cylindrical, often plaited masses, with burst cells; they are incorrectly referred to the so-called fibrin cylinders. In the second case the urinary canals will also be distended, bulging, but filled with a detritus-like mass, formed of the wholly or only partially destroyed epithelial cells.

*The Proper Parenchymatous Nephritis.*—It was the so-called Bright's Disease which first led Virchow to propound his celebrated theory respecting parenchymatous inflammations. He showed that the disease is essentially connected with the epithelium, that it may be limited to the same, so that no free fibrinous exudation is deposited in the urinary canals; but that, on the contrary, the elements themselves are in a con-

dition to produce what was formerly mistaken for metamorphoses of a free exudation (inflammatory globules, fibrin-cylinders). He introduced the name parenchymatous nephritis. The disease, in general, attacks both kidneys. It is in this case the epithelium of the convoluted canals, therefore the proper parenchyma, which is affected. The changes the individual cells undergo are the same as in all parenchymatous inflammations. The cells begin by taking up a large quantity of solid nourishing materials (albuminates), whereby they become distended, larger (hypertrophied); by reason of the abundant, dense, finely granular protoplasm they become turbid, so that the nuclei are concealed; it becomes difficult to recognise the boundary of the several cells; they coalesce, or, as it were, adhere together; on the addition of dilute acetic acid, however, the nuclei again distinctly appear, and also, frequently, the membranes. In the next place small, fine, distinct, fatty granules begin to appear in the contents of the cells, and first around the nuclei; these increase more and more, while, at the same time, the nuclei disappear; the cells are at length completely filled with fatty granules, and finally vanish; the membrane, too, and the granular fatty mass become free (inflammatory globules). Easy as it is to follow the change in the individual cells, the changes thereby caused in the whole kidney become difficult to comprehend and to describe, and for this reason: that the process does not run a uniform course throughout the whole kidney; all the stages which the several cells pass through are often found united in one and the same kidney; finally, at a later stage of the disease, an interstitial nephritis most frequently supervenes. It is on account of these difficulties that a number of stages have been described, without rendering the state of things plainer or easier to understand. I shall describe only three stages, which are, of course, connected by intervening ones. The first stage cannot be anatomically distinguished from the condition which occurs in many acute diseases (typhus fever, scarlatina), and in many chronic affections, especially of the heart and lungs, or, in general, in all diseases with disturbances of nutrition. In infectious diseases (puerperal affections, glanders, &c.) there is found, simultaneously with parenchymatous inflammation in other organs, especially the liver, a similar condition of the kidneys. In the slighter degrees it occurs, therefore, so to speak, as a rule on dissection, and therefore it is exceedingly difficult to obtain perfectly healthy human kidneys for examination. This stage may be compared to the so-called stage of obstruction in croupy pneumonia. The kidney is swollen, œdematous, the capsule is easily torn off; on the smooth surface, which is less bright and shining than usual, there most frequently appears an elegant design of polygonal, or approximatively round figures, produced by the loaded interlobular vessels, which here and there form knotty points, as precursors of the subsequent stellated form. On cutting through the kidney, or on pressure, a bloody, serous fluid can be expressed.

On the surface of section hyperemia is observed in all vessels, sometimes also small extravasations of blood, in general in the urinary canals. The anatomical structure of the several lobules can often be observed in such kidneys much more distinctly than in perfectly healthy ones. The lobules are, that is to say, well marked out by the congested interlobular arteries, and these bear, on both sides, in rows, the red, point-like, striking glomeruli. The contours of the urinary canals appear well marked, especially those of the external convoluted ones, and of a whitish-grey colour. When the urinary canals present such an appearance it may even macroscopically be asserted that a change of the epithelium exists, for the tunicae propriae are too delicate and thin to admit of their being seen, under any circumstances, with the naked eye. The microscope confirms this assumption. The epithelial cells are seen enlarged, slightly opaque, projecting more than usual into the cavity of the canals; the glomeruli are congested, but are otherwise natural.

The second stage will, if the first be compared to the stage of obstruction in croupy pneumonia, correspond to that of red hepatization. The kidney is of normal size, or somewhat enlarged, but flaccid, indicating a change in the elasticity of the connective tissue. The surface is smooth, or presents a slightly velvety unevenness in consequence of the increased volume of the several lobules; the capsule separates easily. On section, the cortical substance appears somewhat broader and anemic, because the interlobular arteries have been emptied by the pressure of the urinary canals becoming more distended; the boundaries between the different lobules are not recognisable, nor is the contour of the several urinary canals; the whole cortical substance is of a dull white uniform lardaceous appearance; the glomeruli are anemic, small, hard to recognise; the form of the pyramids is preserved, their canals are either wholly free or are but slightly obstructed. Papillary catarrh is not unfrequently present. From the base of the pyramids a strongly reddish colour is observed, spreading over the whole pyramid, with the exception of the papilla, which is most frequently pale. This is, as nearly as possible, the Bright's kidney. The unpractised eye may find it difficult to distinguish such a kidney from an anemic but otherwise healthy kidney; but in the latter the surface of section is reflecting, the eye is able as it were to penetrate into its substance; in the former it is dull and opaque. On account of the difficulty of efflux of the venous blood a portion tends to the surface of the kidney, through the stellulae Verheyneii, to the capsule and adipose capsule, which are loaded with dark venous trunks. In the renal vein, too, the blood will flow more slowly, so that thrombi may form, and be continued thence into the vena cava—nay, completely up to the heart; detached particles may form infarctions in the lungs; usually, however, such thrombi become organized to form connective tissue, and are thus rendered less dangerous. In this stage an interstitial nephritis often

supervenes, and especially when the process runs a more chronic course; if its course is, on the contrary, more acute (acute Bright's Disease), the affection is confined to the epithelium. In puerperal fever the process is often very rapid, with uremic symptoms; likewise, in the parenchymatous nephritis accompanying the so-called yellow atrophy of the liver, to which the typhoid symptoms are referable. Under the microscope the urinary canals appear, in this stage, bulging, distended, occasionally varicose; the cells are hypertrophied, highly obstructed, some fatty granules begin to form; the epithelium of the straight canals is always more or less affected; occasionally the shining fibrin-cylinders are seen in these canals. Retrogression is, therefore, in this stage at least, possible. With it the acute active process terminates, and—

The third stage becomes, properly speaking, only a result of the morbid process—if we will a resolution, a recovery, although with loss of substance. This stage is the complete fatty metamorphosis of the cells—a process which, with respect to many new formations, we call a resolution; the difference lies not in the process itself, but in the different importance of the elements. Perhaps here, also, as well as in the proper resolution, a resorption takes place of the emulsive mass formed by the fusion of the cells; the greatest part is, it is true, removed with the urine; but where the glomeruli are destroyed this is not possible, and yet it is a fact that the urinary canals become empty and collapse.

The kidney may still, in this stage, in rare cases, be large and flaccid; and this indicates a relatively rapid course of the process; but in general it is small, shrunken, and firm to the touch. The capsule is difficult to separate—though this is not always the case; this adherence of the capsule may also be due to a perinephritis, especially to an inflammation of the layer of connective tissue enveloping the kidney; and in such cases portions of the renal parenchyma will usually come off when the capsule is separated. On the surface of the kidney numerous dark and congested venous trunks and stellæ are observed; it is uneven, in the extreme degrees of the affection, with greyish or yellowish elevations, some of them as large as peas; and between these finer granulations are seen, scattered here and there, calcified glomeruli, and not unfrequently small cysts; the substance is hard, almost schirrous to the knife. On section, the cortical substance is found to be greatly diminished, slender, often forming only a shell around the pyramids, and of the same appearance as the granulations. The process has also extended into the pyramids, and it appears, therefore, as if the cortical substance had pushed in and dislodged a portion of them; their base appears truncated, their feathery structure is lost; the glomeruli are small, anemic, and are, most frequently, not recognisable except when they are calcified. Frequently we find in such kidneys cysts, whose connexion with the urinary canals was first demonstrated by Beckmann; they vary from a microscopic minute-

ness to the size of nuts ; they are filled with a gelatinous mass, and invested with an epithelium which is formed by the constriction, or complete cutting off of the urinary canals by the irregular contraction, and which is more and more distended by the accumulated mass of the destroyed cells. In such small microscopic cysts and constrictions fibrin-cylinders are usually found ; most frequently in the pyramids, rarely in the convoluted canals. The granulations correspond to the still relatively sound, or rather least affected parts—the depressions between them to the empty collapsed canals ; such collapsed places often present a reddish colour, the pressure on the vessels having ceased, and the circulation having thus again become freer. On account of these granulations the granular atrophy has been compared to the so-called cirrhosis of the liver, and has received the name of cirrhosis of the kidney ; but it is only an external, superficial resemblance which exists between them, no essential agreement is to be found between the two processes. In the liver it is, as is well known, not the hepatic cells which are primarily attacked, but the inter-acinous connective tissue—while in the kidneys the proper point of issue lies in the parenchyma itself. The parenchymatous process is, in this stage, seldom pure, usually it is complicated with an interstitial nephritis ; and on this the appearance of the surface will depend. The latter affection, too, is at length attended with granular atrophy, but in general with greater elevations. If both processes proceed equally and uniformly throughout the whole kidney, a smooth atrophy may be the result. Microscopic examination exhibits most of the canals distended, often two or three times wider than is normally the case—bulging ; and this is also true with respect to the straight canals, with here and there the constrictions and cysts already mentioned. The contents are an emulsive mass of detritus, with fragments of cells of various sizes ; some canals are seen collapsed and folded, and in others, again, the epithelium is still comparatively well preserved. The glomeruli are usually small, corrugated, surrounded by thickened capsules of connective tissue. The epithelium or the glomeruli themselves may be in a state of fatty degeneration ; the latter are sometimes amyloid—some, as already mentioned, may have become calcareous.

#### *The Interstitial Nephritis.*

The change in the interstitial connective tissue may either preferentially affect the intercellular substance, which becomes thickened, hypertrophied, while the cells at the same time become larger, but only in a slight degree increased in number ; or it may be the cells which the active irritation affects, multiplying by frequent subdivision, while the intercellular substance is not particularly increased. This last is, in general, a more acute process ; in its extreme degree the cellular hyperplasia becomes rapid, the several elements as a result hereof becomes less and

less, and at length assume the characters of pus-cells. The process then becomes suppurative; in its lower degrees a pale cellular hypertrophy takes place, which may exist as such for a long time, and finally, as in the first case, pass over into induration (sclerosis). A third but rarer result is the interstitial fatty kidney, where the newly-formed connective tissue passes over into fatty degeneration. The acute suppurative nephritis has nothing to do with this. The first form and the lower degrees of the second may be classed together under the denomination of

*The Simple Interstitial Nephritis.*—Sometimes the cells, sometimes the intercellular substance, are predominatingly increased; this lesion is either partial or general; it attacks both kidneys, and runs a chronic course. The connective tissue formed around the urinary canals contracts, and at the same time the small cysts already mentioned are often formed. The same takes place around the glomeruli; the connective tissue here becomes denser and denser, and begins to contract cicatricially; it is at the same time compressed, the circulation is partially or wholly obstructed; finally, the loops may coalesce, and the glomerulus then at length forms only a homogeneous mass; beside this they may be amyloid or in a state of fatty degeneration. The elements lying in the structureless capsule constitute the starting point of these new formations of connective tissue, not as Frerichs and Rokitansky, nay, even Virchow at an earlier period (*Archiv*, Bd. 4) assumed, a fibrinous exudation. Gradually as the contraction increases the whole kidney becomes much diminished, the tissue becomes sclerotic, tough, anemic; the surface is uneven, with most frequently considerable elevations and depressions; hence there is granular atrophy, the elevated parts corresponding to those least affected. With a uniform new formation and contraction of the connective tissue, a smooth atrophy may also in rare cases arise. Most frequently, as has already been stated, a parenchymatous nephritis is at the same time met with; but in what relation the two affections stand to one another, which is the primary and which the secondary, it is difficult to decide. Under the microscope the interspaces between the urinary canals are seen to be increased, filled with a sometimes more hyaline, sometimes more nucleated substance. As a result hereof the urinary canals are slender, of small calibre, sometimes constricted so as to resemble a string of beads; the tunica propria is often thickened and streaked. The glomeruli are seen to be surrounded with thick, concentric layers of connective tissue; they are small, of a homogeneous appearance, or in a state of greater or less fatty degeneration.

In our day, when interstitial nephritis is, so to speak, in fashion, we must, especially in the slight degrees, be very cautious in diagnosing it; it is well known that what we look for is only too easily found. It has already been stated how the distance between the urinary canals may, to a careless investigator, appear to be increased without being really so; but there are also other interstitial changes, besides the interstitial nephritis,

which in reality may increase the distance. In diseases of the heart, and in general in all cases where there is a possibility of venous stases, the interstitial venous plexus in the kidneys becomes thus distended with the stagnating blood, the vascular walls are thickened, and the urinary canals are, at the same time, also compressed; in other cases the capillary nuclei may, in the same mode as has been described with respect to the glomeruli, during the amyloid degeneration, be increased; they will indeed then, in general, lie tolerably regularly in rows; but as it is impossible to distinguish them from the nuclei of connective tissue, it will be evident that the diagnosis may be extremely difficult, unless recourse is had to the chemical reaction; the difficulty will be still further increased when to such processes an interstitial nephritis is actually superadded.

Hitherto, in speaking of the interstitial nephritis, we have referred only to the cortical substance; but the case is quite different in the pyramids, and when it becomes circumscribed (Nephrit. syphilit.). In the *pyramids* it occurs either more limited, as small greyish tubercles between the pyramids of Ferrein, consequently as a kind of small fibromas—or more universally along the urinary canals; the tissue contracts here also, as the cortical substance and the urinary canals; at the same time, much more frequently undergo cystoid degeneration. The result is a contraction of the pyramids, both in length and transversely, though mostly in the first direction. The pyramids may, at the same time, acquire some resemblance to what is found in hydronephrosis; but in this case the pressure has worked only superficially, it does not proceed from the tissue itself, and the contraction affects the longitudinal axis, while the transverse axis is elongated.

The *circumscribed* interstitial nephritis, or so-called syphilitic nephritis, occurs in several scattered points, and is usually of a purely interstitial nature. It corresponds completely to the processes occasionally observed in persons who, at one period of their life have suffered from tertiary syphilis, in the liver, lungs, and other organs. The affected parts contract, and finally only depressed cicatrices remain after old hemorrhagic infarctions of long standing, with which, probably, such a syphilitic kidney has often been confounded. The two affections are, however, distinguished from one another by the fact, that in infarctions are always found products of the metamorphosis of blood (pigment, crystals of hematin), while these are not met with in the interstitial nephritis. There still remains to be mentioned the rarer *interstitial fatty kidney*. In this case the kidney is in general large and flaccid; on the surface are observed yellowish or whitish striae and marks, which, on section, exhibit themselves over the whole cortical substance; they form irregular figures, so that it may, even macroscopically, be inferred that the fact cannot be referred to the regular urinary canals, but that it lies externally to them. This form occurs pure, but extremely rarely, most

frequently it is combined with amyloid or parenchymatous nephritis. It is, as has been mentioned, also supposed to be connected with syphilis. Under the microscope the urinary canals are seen pushed from one another, of diminished calibre; in the interspaces larger or less irregular fatty masses are deposited. Likewise the glomeruli, and in general the walls of the several vascular loops, are in a state of fatty or amyloid degeneration. The process may be compared with the atheromatous degeneration of the vessels, for in this case also the hyperplastic formations undergo a fatty metamorphosis.

Albuminuria, and, at least in the more advanced stages of the disease, diminished secretion of the urine have been enumerated as essential symptoms of the chronic renal affections, treated of in the foregoing paper; it is, therefore, desirable to see how these symptoms can be made to harmonize with the pathological changes just described. It is well known that albumen exhibits only a very slight tendency to exosmose; but that such may take place, under increased pressure, is a settled point. Botkin's experiments with eggs (*Virchow's Archiv*, Bd. 20) which had been deprived, by means of dilute hydrochloric acid, of their calcareous shells, gave the following results:—An egg treated in this manner, and placed in distilled water, had, at the end of four days, allowed albumen to exude; but if, on the contrary, it were laid in a concentrated solution of chloride of sodium, no albumen was demonstrated in the solution, unless the egg, before having been laid aside, had begun to putrify. In the first case a portion of water presses endosmotically through the membrane, and, in consequence of the increased internal pressure thus produced, albumen again exudes. In the concentrated solution no such endosmose takes place, and, therefore, no exosmose; where putrefaction is commencing, on the other hand, the internal pressure is increased, and the albumen exudes. It has been said that the pressure to which the blood is exposed in the glomeruli must almost necessarily produce an exudation of albumen. This pressure is, in fact, exceedingly great; all the blood in the five or six vascular loops, of which the glomeruli are composed, is conveyed at the same time to the narrow exit, the vas efferens, which is not much wider than each single one of these loops. The pressure would be much greater still if the case were really such as is represented in most manuals, that the vas efferens is given off at an acute angle; but we have seen that this is not the case, and that, on the contrary, it is given off at an obtuse angle, and most frequently forms a curve, whereby the pressure produced by the interruption to the current of blood is somewhat diminished. Important and interesting as the question is, respecting the condition of the urine in the glomeruli, not only with reference to albumen, but also with respect to its reaction, whether this be alkaline, which is, perhaps, most probable, or acid, from

the beginning, it is scarcely possible to arrive at any certainty upon the point. Although this assumption respecting the physiological separation of albumen in the glomeruli is purely theoretical, there is still something in its favour. As the normal urine does not, in fact, contain albumen, the latter must again disappear in the urinary canals, and we are, therefore, naturally led to seek the intervening agent in the epithelial cells; if these are, however, morbid, and not in a condition to execute their depurating part, albuminuria is a necessary result. In the physiological state, too, we may find an argument in favour of this view, namely, in the structure of the epithelium already spoken of; the latter is in the section of the urinary canals, lying next to the glomeruli, rich in albuminates, which gradually diminish and almost disappear in the tubuli recti.<sup>a</sup> Against the occurrence of this separation in the glomeruli, on the other hand, the pathological fact is decisive, that in the extreme degrees of nephritis and amyloid degeneration, where the glomeruli are all but destroyed, and, at all events, cannot be supposed to allow the albumen to transude through their walls, great albuminuria still exists. We are consequently led to refer this transudation of albumen to another section of the vascular system, namely, the interstitial capillary net-work, that is, we turn from the more secreting to the more nourishing section. That it is in this case the increased lateral pressure which brings forth the albumen, is shown also by Frerichs' experiment of tying the aorta below the renal artery. If, that is to say, the glomeruli were the place where the albumen is separated, we should, since the pressure must here first affect the glomeruli, have a considerable albuminuria—but this is not the case; it appears, on the contrary, that the latter occurs most abundantly when the efflux of the blood is arrested, as when the renal vein is tied, that is, where the increased lateral pressure particularly affects the interstitial venous net-work. Yet we cannot, therefore, say that the albumen is excreted solely in this place; it is still possible that it may also, in some cases at least, be eliminated in the glomeruli; indeed it is even possible that the large epithelial cells abounding in albumen during the nutritive change, which suffer in the parenchymatous nephritis, might eliminate albumen. Still, disturbances in the circulation remain to be considered as the most essential source of albuminuria, and closely connected with it, whether the cause of these is to be sought in the vessels immediately belonging

<sup>a</sup> Should this theory prove to be well founded, it would go to explain, and would also receive support from, the fact observed by myself, of the very frequent, if not invariable occurrence of albumen in the urine of the human fetus. Of thirteen specimens of fetal urine, which I have on different occasions examined, all were more or less albuminous. See experiments in Dr. McClintock's paper, "On the Presence of Urea in the Liquor Amnii," in Vol. vii. of the present series of this Journal, p. 39; and also "Experiments as to the Existence of Sugar in the Urine of the Fetus," by W. D. Moore, M.B., in Vol. xx. of the same, page 88.—*Translator.*

to the kidney, or in more general disturbances, as cardiac and pulmonary diseases. We may, therefore, also have passing albuminuria of a purely transitory nature, where a mechanical pressure acts for a time on the large vessels (the aorta or vena cava), as we often see during pregnancy. In the chronic renal affections, treated of in this paper, we have also seen the venous stases to be a constant symptom; only in the amyloid degeneration, so far as it is not complicated with any more considerable parenchymatous or interstitial nephritis, is the case somewhat different. Here the cortical substance becomes anemic, on account of the diminished supply of blood, through the degenerated glomeruli, but at the same time the interstitial capillary net-work is, precisely for this reason, under an increased pressure, and the albuminuria may, therefore, be supposed to proceed from this source. The diminution in the secretion of urine, of course, depends upon the state of the glomeruli. Even if these are still acting, their calibre may be so diminished that only a small quantity of blood can traverse them, and their walls may be so changed that only a smaller quantity of material than ought to do so is in a condition to pass through them, and it is precisely such matters as ought to be excreted, and which constitute the most essential constituents of the urine (urea, uric acid) that are retained; hence a diminished, and at the same time, qualitatively altered, urine will be secreted. In other cases, where the glomeruli are not altered, or, at all events, are inconsiderably so, the urine will not be qualitatively, or even quantitatively altered, but will only carry off the abnormal albumen.

Finally, in conclusion, some remarks upon the so-called fibrin-cylinders, which were formerly considered to be a sign of inflammation, as a fibrinous exudation from the hyperemic vessels, whence the name derived from a time when all kinds of albuminates were called fibrin on account of the similarity of their reaction; the decisive character of fibrin is the fibrillar form in which it coagulates. Were they really an inflammatory product they should always be met with, and precisely in those places where the inflammation is most strongly marked; but this is not the case. It has already been casually mentioned that they are found principally in the straight tubes in the pyramids, more rarely in those of the cortical substance, and scarcely at all in its proper convoluted tubes, and that they are often situated in the constrictions and in the small microscopic cysts. Their origin is very obscure; according to Key, their formation depends on a change in the albumen of the epithelial cells. Virchow, too, inclines to this view. They scarcely even consist of fibrin, although Beckmann and Virchow sometimes saw a fibrillar structure; they are most nearly analogous to the so-called colloid mass. They appear at one time quite pale, shining, transparent, at another slightly inclining to yellowish; in other cases they enclose the discoloured blood cells, pigment, finely divided fat, epithelial nuclei, and other remains of epithelium;

they often pass away with the urine, when they do not lie in too strongly constricted places; if they lie in the small cysts, they gradually dissolve in the contents of the latter. Although the fibrin cylinders occur frequently in the parenchymatous nephritis, too great or too decisively diagnostic importance ought not to be attached to them. The cylinders occurring in papillary catarrhs are formed of mucin, and are purely catarrhal secretions.

## CLINICAL RECORDS.

[It is intended to set apart a portion of the Journal, in this place, under the title of "Clinical Records," for reports of cases, together with such clinical observations as may be elicited by them; merely elementary matter being avoided, and lengthened disquisitions reserved for the first part of the Journal. It is hoped these communications will serve to make known the peculiar features presented by cases of frequent occurrence, which are now lost; to further the acquisition of a knowledge of the natural history of disease; to render permanent, and widely diffuse, the valuable observations constantly falling from our Hospital Physicians and Surgeons; and, at the same time, direct attention to special points, and afford materials for more elaborate essays.—ED.]

*Case of Melanosis.* By MAURICE H. COLLIS, F.R.C.S.I., M.B., &c., Surgeon to the Meath Hospital and County Dublin Infirmary, Member of Council R.C.S.I.

There are, at least, two distinct forms of melanosis of the eyeball:—1, that in which the melanotic matter is simply a secretion in excess, of pigmentary matter; and 2, that in which it is conjoined with cancerous deposits.

Both forms of disease are capable of permanent cure by operation, but in widely different ratios. Both are also liable to produce secondary deposits throughout the body generally, but the character and situation of these deposits are very different.

The case I now wish to place on record is one of the first class, or simple melanosis, in which removal of the eyeball was followed, not by local relapse, but by a slow deposit of melanotic matter in the sebaceous follicles of the skin, one tumour appearing after another until the entire surface of the body was covered with tumours of various sizes.

The patient, Mary Anne Heaffy, born in 1800, was sent to me by my friend, Dr. Bigger, in September, 1857, with a note to the effect that she had lost the sight of her right eye by melanosis. I admitted her into the Meath Hospital, September 21st.

She told me that sometime in 1855 she felt a sudden and severe dart of pain in the inner angle of the right eye. This pain occurred irregularly, about once each day; it gradually increased in frequency and duration, and extended to the outer angle, the ball of the eye, and the temple successively; it was accompanied by great watering of the eye and nostril. In spite of these pains she did not perceive that her vision had been impaired until nine months had elapsed. She then suddenly discovered that, with the exception of a faint glimmer of light in the lower part of the eye, all powers of sight were gone. This state of things slowly progressed for the worse, and on admission I found the following appearances:—There was much swelling of the upper lid, and a good deal of chemosis round the cornea. The eyeball was distorted, slightly enlarged, and projected forward at the lower and inner quarter. The sclerotic at this point was thinned and prominent, and of a blackish hue. The cornea remained transparent, allowing us to see that the capsule of the lens was opaque, and that the lens, in its capsule, was pushed forward into the anterior chamber. The iris was not to be made out; it was, I suppose, drawn out of the way, leaving the pupil widely dilated and capable of permitting the displacement of the lens. The eyeball was perfectly natural in all its muscular movements.

For the sake of relieving a feeling of intolerable tension and pressure, I punctured the chemosis in several places, with great relief to the patient. On the next day I found that the sclerotic had given way at the prominent point, and that a shreddy black substance was oozing through the opening. This continued from day to day, and seemed to relieve her to some extent. Examination of it, by the microscope, revealed only granular pigment-cells, with no signs of cancer-cell.

The sight of the eye was quite gone; the patient was in almost constant pain and mental uneasiness; the disease was still quite local in its manifestation, and confined within the globe of the eye; the patient's general health was quite unaffected as yet. Taking these facts into consideration, and also that at any moment an extension of the disease might arise in the muscles of the orbit, or even in more distant parts, I held a consultation on the case, and with the concurrence of my colleagues, I removed the eyeball on the 5th October, 1857. The muscles were

removed along with the globe for the sake of ensuring the complete extirpation of all the diseased structures.

The tumour, when divided, was found firmer than the rest of the eye, and somewhat circumscribed; it consisted of amorphous colouring matter, oil globules, and aggregations of coloured globules. No cancer-cells were to be found in any part of it; nor did it resemble cancerous growths in any particular of outline or consistence. The colouring matter had spread into the vitreous humour, retina, capsule of the lens, and iris; none was found in the lens or sclerotic (even where thinned by pressure of the tumour); nor was there any in the optic nerve or muscles. The lens was still in its capsule, but was pushed forward so as to fill the anterior chamber.

The case progressed favourably as regards the operation; the eyelids drew together and closed over the empty socket, and no return of the disease took place in the neighbourhood of its primary development.

I saw her several times in the course of the next year. In February, 1859, she came to show me a small globular tumour which had rapidly formed under the skin of the right breast, near the axilla, with some radiating adhesions towards the gland and skin. This had grown, with much pain, to the size of a bean, and had then ceased to grow larger. It was sore to the touch, of a hard tense feel, and showed the dark colour of melanotic deposit through the skin. I applied some *lotio plumbi subacetatis* to it, and, at the end of ten days, it had lessened a little, had got less painful, and bore handling without discomfort to the poor woman. I would have removed it, as it was then solitary, but she would not consent. I saw her again in 1860; she had then three distinct tumours in the right breast, quite isolated from each other, one in the left breast, and several on the arms, legs, and back.

The history of all was alike: a rapid painful growth to a certain size (from that of a nut to that of a chesnut); a complete cessation of pain, and a diminution in the dimensions of each tumour to a certain extent, with the almost simultaneous development of a new tumour elsewhere. Nothing could well be done for the relief of the poor woman, or to check the appearance of these tumours. I gave her various tonics to improve her general health, as it had suffered to some extent. In the summer of 1862 I got Mr. Connolly to execute drawings of the state of the body. On the left malar bone may be observed a group of irregular oval tumours; these are movable on the periosteum. On the neck, and all over the thorax and arms, they are thickly scattered, of all sizes. Most are of a dusky hue, as if the intense black was veiled by a layer of skin stretched over them. One on the back, between the shoulders, is of a glossy polished black, like the colour of plumbago. A large one on the loins, the surface of which is cracked, and bleeds considerably, is also intensely black. The legs and arms are more sparingly covered with

these growths, but some of them are as large as oranges. The majority are not larger than walnuts, or pigeons' eggs. About one-fifth are larger, and, perhaps, as many are no larger, than filberts. Numerous as the



tumours were then, they are, at the present date, much more numerous. The woodcuts (by Mrs. Millard) are accurate copies from Mr. Connolly's most faithful drawings. To the state of things thus delineated may now be added great numbers of fresh tumours—several on the face, of large

size, have greatly added to the distressing appearance of the poor creature, as well as to her sufferings. She is now confined to bed, wasted and



worn out by pain and discharge of blood from three of the largest tumours, over which the skin has given away. Almost daily, for the last year, she has been losing more or less blood from the three large tumours on the back, the arm, and the thigh; yet still she holds on to life with an unexampled tenacity. Her body is wasted considerably, but by no means to the extreme degree that would be supposed likely from the amount of the abnormal deposit. Until loss of blood had occurred to a great extent, her general health and appearance did not suffer. The tumours had multiplied to a great extent, and the melanotic deposit was

much greater than the cancerous deposit in the most extreme cases of genuine cancer, while the woman's general health was not impaired. In genuine cancer a quarter of the deposit would have been accompanied by a prostration of vital power, and an appearance of cachexia, such as in this case scarcely yet exists after steady hemorrhage for 12 months. The original constitution of the disease, as a local development of simple melanotic matter, its reproduction in the form of encysted tumours (having their seat to all appearance in sebaceous follicles), the absence of cancerous cachexia, properly so called, and the absence of all signs or symptoms of internal deposits, all lead me to conclude that this is a case of simple non-cancerous melanosis. The hemorrhage is a result of ulceration of the over-distended integument. I have seen exactly similar ulceration and hemorrhage from fibrinous, adenoid, and even fatty tumours, which, by their large size and peculiar circumstances of situation, or exposure to external injuries by friction, had over distended and burst through the skin. It is now six years since the first appearance of the primary growth in the eye, and four since that in the breast was first brought under my notice. A much smaller amount of encephaloid disease would long since have killed the patient; and had the melanotic deposit been complicated with encephaloid its destructive progress would have been still more rapid. Internal organs and bones would have been poisoned, and general cachexia would, undoubtedly, have appeared long before this to close the sad scene of suffering. The poor patient may yet linger some months, if I can judge from the slight change for the worse which has taken place in her between my last two visits.

Applications of the solution of perchloride of iron check any severe hemorrhage, and dressing with dry cotton wool keeps down the daily weeping of blood within moderate limits.

Another point suggested by this case is the question, whether, in a similar case, the eye should be removed. A priori, the course adopted seems the best; it seems to afford the fairest chance for the permanent removal of the disease. Still, it is just possible that if the eye had been left, a constant daily discharge of the melanotic matter from it might have been a vent or safety valve for the system. In any future case, at all resembling this, it might be well to bear this point in mind, and, if it seemed advisable, to try the effect of non-removal, at least for a time.

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*Poisoning with Belladonna Successfully Treated with Opium.* By R. MACNAMARA, M.R.I.A., Professor of Materia Medica and Member of Council R.C.S.I., one of the Surgeons to the Meath Hospital, &c., &c.

The following case, in which poisoning by belladonna was successfully

treated by the internal exhibition of opium, is recorded here for the purpose of supplementing those most important and interesting cases detailed by my friend and colleague, Mr. Wharton, in the pages of the *Dublin Medical Press* for September 3rd, 1862; to this most instructive article I must refer such of my readers as seek to be made masters of the literature of the subject, contenting myself here with briefly condensing, for their instruction, a *résumé* of what he has, in the place indicated, so ably put together for the benefit of his professional brethren.

In the *Dublin Journal of Medical Science* for July, 1838, Dr. Graves drew attention to the value of belladonna as a sedative in cases of fever where the pupils are contracted. Dr. Joseph Anderson drew attention to the antagonistic action of opium and belladonna, whilst Dr. Lee was the first to subject these views to the *experimentum crucis* in a case of poisoning by belladonna, which he treated with opium; and in a case of poisoning by opium, which he treated with belladonna; abroad Dr. Lee speedily found imitators; but, so far as I know, I believe it was reserved for my friend, Mr. Wharton, to be the successful pioneer, in this city, of this new plan of treatment. I shall not pursue this subject further, but at once proceed to place on record the following case which was reported for me by my apprentice, Mr. Percival, the intelligent and attentive resident pupil in the Meath Hospital.

John Mulligan, aged two years and two months, was admitted into the Meath Hospital, under the care of Surgeon Macnamara, on the 31st day of October, 1862, labouring under the effects of poisoning by belladonna.

*History.*—His mother stated that she lives at Rose Hall, Templeogue, County Dublin, and that, about half-past nine o'clock this morning, the child got into an empty room in which there was a small pot containing extract of belladonna, of which the child must have taken some, for she found his face and clothes smeared over with it. Some time after, she saw the child fall, and then remarked that he had a wild look about the eyes, upon which she brought him into hospital at half-past three o'clock, p.m.

*Symptoms.*—On examination I found the pulse strong, the pupils greatly dilated, he picked and pulled at his clothes, and was delirious. The mother having brought the pot which was found with the child, the contents were at once recognised to be extract of belladonna.

*Treatment.*—On the patient being put to bed I gave an emetic consisting of sulph. of zinc. gr. x., and pulv. ipec. gr. vi., which had the desired effect; the matter vomited had no trace of belladonna. Surgeon Macnamara having been sent for, ordered an enema of castor oil and turpentine to be given, which came away without any signs of belladonna being present in it. A short time after, five drops of tincture of opium were given; after one hour three drops, and every hour after, two drops, until

the patient fell asleep, which was at a quarter before one o'clock, a.m., up to which time there was no apparent contraction of the pupils. He slept quietly until ten minutes before two o'clock, when he started up and began crying. I then remarked, for the first time, that the pupils had contracted a little; he fell asleep again in about five minutes, and slept quietly until half-past six o'clock, a.m., when all the delirium had passed away, and the pupils were a little more contracted. He has been running about the ward all day.

*Result.*—November 1st, at 12 o'clock, Surgeon Macnamara ordered two drops of the tincture of opium to be given, and he has been going on remarkably well ever since; six o'clock, p.m., going on well, contraction of the pupils apparent; ten o'clock, p.m., sleeping soundly.

November 2nd, three o'clock, a.m., slept soundly all night, the pupils still a little dilated. Ten o'clock, a.m., the patient has left the hospital cured.

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*Poisoning by Laburnum Seeds.*—By JOHN POPHAM, A.M., M.B., L.K. & Q.C.P., Physician to the Cork North Infirmary.

On the evening of the 11th August, 1862, a number of children, about ten altogether, were brought to the infirmary, suffering in various degrees from the effects of eating some leguminous seeds, which were described by them as growing in pods on trees, and of an exceedingly bitter taste. It was conjectured at the time, and verified afterwards, that the seeds were those of the *Cytisus laburnum*, or common laburnum, whose legumes the children mistook for those of the vetch. Most of the children, fortunately, had partaken of them in but small quantities, being deterred by their nauseous taste, and thus escaped with transient symptoms of gastric irritation; but one little fellow, named John Neil, about six years old, had swallowed the seeds greedily, and was soon afterwards attacked with marked signs of acro-narcotic poisoning. He first complained of giddiness and pain of the head, and a sensation of dryness, heat, and constriction in the throat; these symptoms were speedily followed by an excruciating sensation in the stomach, from which he sought to get relief by rolling on the ground with his hands pressed to the epigastrium, screaming and kicking violently. After a time nausea and vomiting came on, and he threw up a quantity of dark brown grumous matter, very bitter; when brought to the hospital the pains of the stomach still continued, the surface of the body was cold, the face pallid and anxious, his movements were agitated, the pulse rapid and fluttering, breathing laboured; he had also a convulsive twitching of the muscles of the face, and the pupils

were widely dilated, and less sensible to light. Upon his admission Dr. O'Sullivan, house-surgeon, had heat applied to the stomach and extremities, and administered an emetic, followed by draughts of warm water. I found, on arriving shortly afterwards, that the emetic had produced free vomiting, and, as the abdomen was painful and tympanitic, I directed a turpentine enema which had an excellent effect. Sinapisms were also applied to the epigastric and cardiac regions, and to the spine; and the aromatic spirits of ammonia were given. But it was found very difficult to get him to take anything from the forcible struggles which he made, and also from some difficulty of swallowing; however, he drank some strong coffee, which roused him. After the pain had abated, which was about two hours from admission, narcotic symptoms came on, the breathing becoming slow and stertorous, so that it was necessary to shake him up roughly. When thus roused he was testy and impatient, answering snappishly and irrelevantly, and almost instantly relapsing into stupor. By unremitting attention in resisting those lapses into insensibility, and the steady administration of stimulants, external and internal, he began, at length, to show more consciousness, the animal heat rose, the pulse became firmer, and he sank into a quiet, though heavy, sleep, unbroken till a late hour of the morning, when he appeared quite recovered, except being weak and pale.

I find but little notice of poisoning by laburnum seeds in works on toxicology; in *Dr. Christison's Treatise* a brief account is given of their deleterious properties, less from his own observation than that of others, and leading him to class the laburnum seeds with the narcotico-acrids. He is inclined, however, to regard the narcotic as the preponderating quality. "In two cases," he says, "communicated to me by Dr. Traill, the effects seem to have been almost purely narcotic." The above case, however, while it justifies the opinion about the double action of the poison, places the symptoms of acridity in strong relief. There seems little reason to doubt that these seeds are violent local irritants, capable of causing death by gastric inflammation, were it not that the stupefying effects upon the brain and nervous system, both from the poison itself and the shock from overwhelming pain, tend to produce more speedy dissolution.

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*Clinical Reports of two cases of Lacerated Perineum Restored by Operation.*  
By D. LLOYD ROBERTS, M.D., Surgeon to St. Mary's Hospital for Women and Children, Manchester, Fellow of the Obstetrical, and Corresponding Member of the Epidemiological Societies of London.

CASE I.—*Perforation of the Perineum in a First Labour. Aperture nearly healed. Complete Laceration of the Perineum in the Second Labour. Operation.*

*Cure.*—Catharine C., aged 26, was admitted an in-patient of St. Mary's Hospital, on July 13th, 1861. She has had two pregnancies, both of which were favourably conducted to their full period. Menstruation commenced at 14, and continued, with regular periodicity, to the time of the first impregnation, although somewhat in excess of the normal quantity. Two years and a-half ago her first labour took place; it occupied 10 hours. The presentation was natural, but during the extrusion of the child, the head perforated the perineum, leaving a small portion of its anterior edge entire. The perforation extended posteriorly to within one-eighth of an inch of the anus, dividing only a few of the fibres of the sphincter ani. Through this abnormal aperture the child was born. Very considerable tumefaction and sloughing supervened; the labia being much swollen and inflamed. The inflammation was reduced by soothing treatment, and the cleft in the perineum afterwards gradually contracted, by means of the application of acetum lyttæ, iodine, and actual cautery, to the diameter of a No. 12 catheter. A very slight operation would now probably have sufficed to complete the cure; to this, however, she refused to submit, and left the hospital. Twelve months afterwards she was again in labour, the duration of which was four and a-half hours. As the head was passing the perineum, the latter, this time, was completely lacerated, the rent almost entering the anus. Inflammation and sloughing of the parts followed, and for seven weeks she was under the care of a surgeon, by whom lotions and poultices were applied. At the expiration of this time she entered the hospital in a very weak and anemic state, and with partial loss of power of the sphincter ani. Over the act of defecation, when effected naturally, and without the stimulus of purgatives, she still retained considerable control; but when aperients were exhibited—a measure often rendered necessary by the naturally constipated state of her bowels, dejections and flatus were often passed involuntarily.

A few weeks were occupied in preparing her for the operation for lacerated perineum; and on September 7th she was placed on the operating table. The margins of the perineum having been pared for half an inch in thickness, and about three inches in length, the edges were brought together and secured by three deep, and three superficial sutures of ordinary ligature; the parts were dressed and the patient placed in bed, on her side, with her legs bandaged together to keep the parts in apposition. The case progressed most favourably. The deep sutures were removed on the fifth day, and the edges were found united completely in its deep parts. The superficial portions that were not yet united, healed rapidly by granulation. The patient made a most perfect recovery.

CASE II.—*Laceration of the Perineum. Procidencia Uteri. Operation.*  
*Cure.*—Mary Ann —, aged 21. Menstruation regular. Subject to whites. She had a child two years ago. Her labour was not a very

difficult one; but five days afterwards, she got up and walked about. This was followed by a bearing down of the womb, which has ever since incapacitated her from continuing her work, owing to her inability to endure prolonged standing. Pessaries were recommended by one or two medical men whom she consulted. These, however, she was unable to wear.

*State on Admission.*—The uterus is completely procident and hypertrophied, with a sanious discharge oozing from the os. The lips of the uterus present the appearance of raw beef, and have a tendency to bleed on the slightest irritation. The os tinæ is very patent; a No. 12 catheter can be passed through it into the uterus to the extent of seven inches. The case, in fact, furnishes an excellent instance of elongated cervix so graphically described by Mons. Huguier. The procidentia admits of being reduced, but returns immediately on resumption of the erect posture. The constant dragging pain produced by the weight of the uterus has seriously undermined her health and spirits; the urine trickles involuntarily on the slightest exertion, or, sometimes, there is uncontrollable incontinence. The bowels are generally constipated, and require medicine to move them. The perineum was found to have been lacerated; the rent passing through some portion of the sphincter ani, but not entering the bowel. The countenance is pale and waxy, the appetite gone, and the pulse small and frequent. She has all the appearance of a woman suffering from an aggravated attack of uterine dyspepsia. After the general health had been improved by preliminary treatment, including rest, vaginal injections, and restorative medicines, I next directed my attention to the restoration of the perineum. The operation for lacerated perineum was accordingly performed. A piece of mucous membrane two and a half inches in extent, and shaped like a horse-shoe, having been removed from the lacerated portion of the perineum, the edges of the wound were brought together by means of the ordinary quilled suture, and the junction was still farther maintained by some superficial sutures. After the operation, the patient's knees were tied together with a bandage, the catheter was passed every four hours, night and day, and the bowels kept constipated by a daily dose of laudanum. On the evening of the third day after the operation, the deep sutures were removed, and the wound was found to have united in its entire extent. On the seventh day the superficial sutures were also taken away, and, at the end of three weeks, the patient was allowed to leave her ward for the convalescent room. She was discharged perfectly cured.

I saw her a few weeks ago, when she informed me that she was quite well, and had returned to her work.

These two cases are instructive as well as interesting, and illustrate still further the benefits conferred by plastic surgery upon the female sex. Only a few years ago, these two miserable creatures would have been

told that their condition was irremediable; but, thanks to the exertions of Mr. Baker Brown in this country, and of M. Roux on the continent, the great advantages and frequent success of these operations are causing them to gain ground in general estimation, and the amount of hidden suffering that has been, or may be, relieved is not easily estimated. The first case is interesting, as presenting the somewhat unusual accident of perforation of the perineum, in the almost entire closure of the fistulous opening by suitable astringent dressings, in the presumed want of a perfect cure, only by the patient refusing to submit to a trifling operation; in the complete laceration of the perineum during the second labour, a consequence, no doubt, of the already existing fistulous opening. After recovery from her labour, she presented herself to me, and begged me to admit her into the hospital, and relieve her from her miserable state by operation, or any means I thought fit.

The second case is a more ordinary one. We may remark in it, first, the inefficiency of pessaries in keeping up the uterus, in cases where the perineum is utterly destroyed. Second, the long-neglected prolapsus producing ulceration and subsequent constitutional disturbance, resulting in a complete loss of health and spirits. Third, the therapeutic value of rest in uterine hypertrophy, a condition which few places besides an hospital can supply to women in her rank of life.

In both cases the interference with the union of the parts which would have been certain to arise from the act of defecation, was averted by a daily dose of tincture of opium, by which the bowels were controlled. After union has taken place, and when there is inclination to evacuate the bowels, I have found the administration of a simple soap enema very effectual in softening the hardened feces which the rectum is so likely to contain in consequence of the prolonged artificial constipation, and no ill effects have followed the plan.

The regular and periodical use of the catheter should not be lost sight of, as the irritation and tension of the parts, after the operation, are generally very great, and any urine trickling into the vagina, and getting between the edges of the wound, would be likely materially to interfere with the healing process.

If pregnancy should occur again to either of these women, there is little reason to doubt that rupture of the perineum may be avoided by due care and attention on the part of the accoucheur.

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*A Case of Diabetes Mellitus.* By C. F. MOORE, M.D., L.R.C.S.I.,  
Medical Superintendent to the Middletown Hospital, County Armagh.

A. S., a spare woman, æt. 45, a labourer's wife, nine years married,

mother of several children, four now living, admitted to Middletown Infirmary, June 4th, 1861. Worn and hectic looking; fat much absorbed; great appetite and thirst; passes about 10 qts. of urine in the 24 hours, of a palish straw colour; mawkish sweet smell; sp. gr. 1040. *Drinks* 3 quarts buttermilk and water; water ad libitum; 1 quart sweet milk, and 1 quart broth, containing 10 oz. of meat.

The urine has a slightly acid action on litmus; turmeric gives no indication of change; a little boiled on a piece of flat glass, with 2 drops of liquor potassæ, became brown and gave distinct saccharine smell (burnt sugar).

June 7th.—Passes 10 qts. in  $22\frac{1}{2}$  hours.

8th.—Passes  $10\frac{1}{2}$  qts. in 24 hours; looks something stronger and fuller in flesh; the nurse has counted about 8 qts. of liquid ingested in last 24 hours. Ordered Dover's powder, 15 grs., in divided doses, in 24 hours, and to have a castor oil draught, as some colocynth pills, taken last night, have had no effect. Sp. gr. of the urine, passed at noon, 1037 at 60° Fahr.

9th.—Seems stronger; tongue clean; appetite great; omit the quassia mixture, which she has been taking the last few days; the oil draught to be repeated, as the first did not act. 12 qts. of urine were passed in last 24 hours, weather being very damp.

10th.—Little change in symptoms, &c.

11th.—State as yesterday. Diet is 2 lbs. white bread; 10 oz. meat (in 2 pints of broth); 1 egg; 1 qt. newmilk; buttermilk and water ad libitum. Weighed 7 st. 9 lbs. on 10th June.

13th.—Passed 9 qts. in 22 hours.

14th.—Pulse 96; very hot sultry weather for this season; ther. 75° at 3 p.m.; and, owing partly to the effect of the weather on the skin perhaps, the kidneys have not secreted nearly so much, she having passed only 6 qts. of urine in last 24 hours; the sp. gr. of the first of this morning's being  $1034\frac{5}{10}$ ; colour perhaps a little deeper than before—yellowish or more canary coloured; sp. gr. of urine passed at 9 p.m. yesterday was 1036. Continue Dover's powder, grs. 15, in 3 doses daily; also the castor oil draught.

15th.—Pulse about 100; urine 6 qts.; continue Dover's powder and good diet.

16th.—7 qts. of urine this day.

17th.—6 qts.; the bowels have at last yielded, and now diarrhea has occurred.

18th.—5 qts. urine; diarrhea continues.

19th.— $12\frac{1}{2}$  pts.; pulse 84; diarrhea; omit the Dover's powder.

20th.—Diarrhea less; to have chalk mixture and laudanum; 7 qts.

21st.— $6\frac{1}{2}$  qts.; bowels more regular.

22nd.—6 qts.; 5 stools; omit powder; pulse 72.

24th.—Weighs 7 st. 11 lb., *i. e.* 2 lb. more than 14 days since. Diet as stated in report of 11th June.

25th.—Has been again taking the quassia mixture, which she likes, and thinks it agrees with her; bowels now regular; no Dover's powder last night, as it seemed to cause the diarrhea before; 6 qts. of urine.

26th.—Pulse 80; 6 qts.; sp. gr. 1036, at temperature 63°; in better spirits, and feeling stronger; feels warmer now; not cold and chilly as when she came in; has heartburn after breakfast; bowels not moved for 48 hours; the diarrhea some days ago weakened her much; never menstruated since before Christmas. About seven weeks before Christmas was "poorly," and continued so for about four weeks "off and on;" always a red secretion; had leucorrhea often before in the "intervals." Six months ago she "saw as much water as she does now;" she must have been ill a year; she got a great wetting, walking some 14 miles, in November, 1859, in "chilly weather;" she had bad shoes; it was "a blowing cold day;" was very wet from her knees down; does not remember if "poorly" at the time; felt chilly when she got home; did not feel ill, unless a pain in her back after; however, had this pain before that time; began to feel "thirsty" from that out, and to have to rise at night to micturate; had no cough. To have small doses of sesquicarbonate of ammonia, with the quassia mixture, twice daily; also to have 5 grs. of compound rhubarb pill at bedtime.

28th.—Urine 6 qts.

29th.—Urine 6 qts.; some pain in back; looks better.

30th.—Urine 6 qts.; pulse 72.

July 1st.—Weighs 7 st. 8 lb.; has two half ounce doses of rennet; urine sp. gr. 1035.

3rd.—Pulse 75; weakish; pain up her back from loins up; left foot numb and cold; no perspiration; continue rennet.

4th.—Urine 7 qts.

5th.—Urine 6 qts.

6th.—Urine 6 qts.

8th.—Urine 6 qts. in 27 hours; weighs 7 st.  $9\frac{1}{2}$  lb., and less thirst since she began the rennet; begins bran bread to-day.

9th.—Urine 6 qts.

11th.—Urine 7 qts.; fresh rennet being out, she tried a little slightly salted and dried, but had to leave it off, as it caused thirst; not feeling well; the weather is very wet.

12th.—9 qts. of urine; weather cold and wet, and it, as usual, affects her unfavourably; to have an oil draught.

13th.—Urine 8 qts.; recommences quassia mixture.

15th.—Urine 6 qts.; constantly requires castor oil; weighs 7 st.  $10\frac{1}{2}$  lb.; is very tired of the bran bread; weather to-day close and damp; to try

home-made bread, with half the usual quantity of bran, and raised with a little soda and buttermilk; begins rennet again in a diluted form.

16th.—Castor oil.

17th.—Weather cold and wet.

18th.—Sleeps better; less thirst.

20th.—7 qts. of urine; rennet finished; recommence quassia mixture.

22nd.—Weighs 7 st.  $10\frac{1}{2}$  lb., same as this day week; she had rennet on three days and quassia mixture on two days; latter made her thirsty, she thinks; to take 5 grs. of compound rhubarb pill at dinner.

31st.—Passes 7 qts. of urine; had continued the quassia mixture; is at times very weak, and almost constantly requires aperients. She weighed, 29th July, 7 st. 11 lbs. She left the hospital on 3rd August, and returned home to her husband and children, in an adjoining county; and though confined to bed, and possessed of a great appetite, still lives. (January 1st, 1863).

From the above it will be seen that the case has lasted from November, 1859, to January, 1863, more than three years. That the exciting cause was apparently a severe wetting, during several hours, at a cold season, when fatigued, superadded probably to exhaustion from scanty means and child-bearing.

Hospital treatment was beneficial, as the quantity of urine fell from 10 and 12 qts. on admission, to 6 qts. and less, in the comparatively warm part (July) of a cold and wet season, and had only advanced again to 7 qts. in August, when the temperature began to fall, and when she was, to some extent, suffering from nostalgia, superadded to her other disease, and she had gained 2 lbs. in weight while in hospital.

When the rennet was good it seemed to allay the thirst better than anything else, and to keep down the quantity of renal secretion as well, if not better, than anything else. The quassia mixture sometimes seemed to cause thirst; if a case again comes under my observation I will "ring the changes" on lighter bitters more than I did in this case.

Constipation was a troublesome and constant concomitant in her case, no doubt from the diversion of fluids from the alimentary canal to the kidneys. The state of the air as to heat, cold, and moisture, sensibly and painfully affected her as to her disease. I found no encouragement in using ammonia; Dover's powder, too, was only a temporary good, and then again it so constantly caused diarrhea that I had to give it up.

The specific gravity of the urine was 1040 on admission, but came down to  $1034\frac{5}{10}$ , and 1036 under hospital treatment.

As to keeping the patient from drinking I looked on that as impossible; as I also did the attempt at keeping up a constant supply of fresh rennet, even if a cure could be expected from its constant use.—*January 9, 1863.*

## BOOKS RECEIVED, FEBRUARY, 1863.

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2. Air and water, their impurities and purification. By H. B. Condy. London: Davies. 8vo, pp. 50.
3. An appeal to Physiologists and the Press. By H. Freke, M.D., &c. Dublin: Fannin and Co. Pamphlet, pp. 34.
4. The Microscope and its revelations. By William B. Carpenter, M.D., &c. Third edition, illustrated by 10 plates and nearly 400 wood engravings. London: Churchill. 1862. Fcap 8vo, pp. 792.
5. Health in the tropics, or sanitary art applied to Europeans in India. By W. J. Moore, L.R.C.P., Edinburgh, &c. London: Churchill. 1862. 8vo, pp. 318.
6. The renewal of life. Clinical lectures illustrative of the restorative system of medicine, given at St. Mary's Hospital. By Thomas K. Chambers, M.D., &c. London: Churchill. Post 8vo, pp. 430.
7. Mentone, The Riviera, Corsica, and Biarritz, as winter climates. By J. H. Bennet, M.D., &c. Second edition. London: Churchill. 1862. Post 8vo, pp. 238.
8. Medico-chirurgical transactions, vol. XLV.
9. Lectures on the distinctive characters, pathology and treatment of continued fevers, delivered at the Royal College of Physicians of London. By Alexander Tweedie, M.D., F.R.S., &c. London: Churchill. 1862. 8vo, pp. 301.
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PART I.  
ORIGINAL COMMUNICATIONS.

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ART. VIII.—*Reports in Operative Surgery.* Series 8th. By RICHARD G. BUTCHER, Honorary M.D. Trinity College, Dublin; M.R.I.A.; Chairman of the Surgical Court of Examiners, and Examiner on Surgery in the Royal College of Surgeons in Ireland; Fellow and Licentiate of that Body, and late Member of its Council; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery.

THE present paper, in continuation of my "Reports in Operative Surgery," contains, I conceive, a few of the most interesting cases that could, by possibility, be submitted to the profession; and because so, according to my judgment, I have selected them from amongst many abounding in difficulties.

CASE 1.—ELEPHANTIASIS ARABUM, AFFECTING, IN THE MOST FORMIDABLE WAY, THE LOWER EXTREMITY, SUCCESSFULLY TREATED BY LIGATURE OF THE FEMORAL ARTERY.

CASE 2.—A FOURTH SUCCESSFUL CASE OF EXCISION OF THE KNEE JOINT; ALL THE FUNCTIONS OF THE LIMB FULLY PRESERVED, WITH THE EXCEPTION OF THE KNEE BEING RENDERED FIRM AND RIGID (*the perfection of cure*); NO DEFORMITY WHATEVER.

CASE 3.—SUCCESSFUL EXCISION OF THE ENTIRE UPPER JAW AND PALATE BONE, FOR AN ENORMOUS FIBRO-VASCULAR TUMOUR; TERRIFIC INTERMEDIARY HEMORRHAGE; LIGATURE OF THE INTERNAL MAXILLARY ARTERY; DIGITAL COMPRESSION KEPT UP CONTINUOUSLY, NIGHT AND DAY, FOR FIFTY-EIGHT HOURS, UPON UNUSUAL NUTRIENT VESSELS; PERFECT RECOVERY.

CASE 4.—SUCCESSFUL EXCISION OF THE ENTIRE UPPER JAW AND PALATE BONE, FOR A VERY LARGE OSTEO-SARCOMATOUS TUMOUR; LIGATURE OF THE INTERNAL MAXILLARY ARTERY; RAPID RECOVERY, WITH SCARCELY A TRACE OF DEFORMITY.

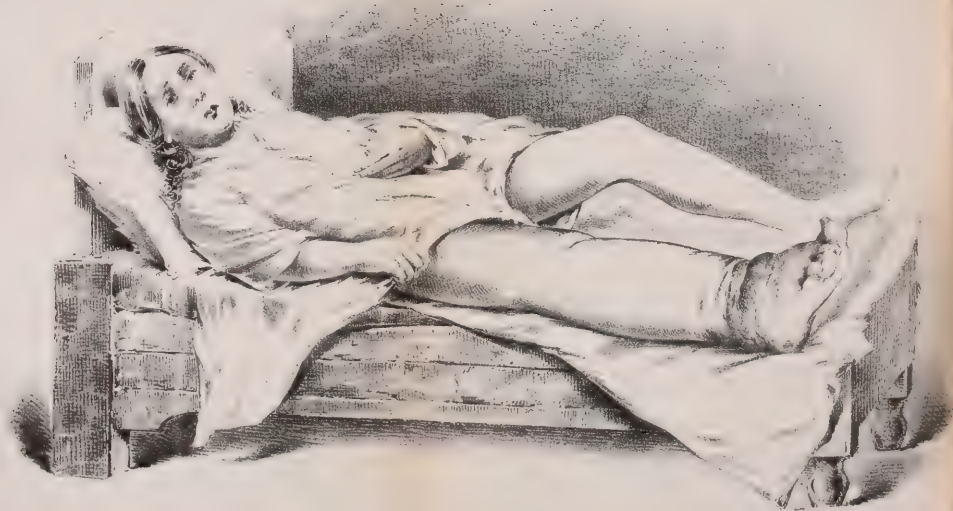
CASE 5.—A MOST UNUSUAL AND HIDEOUS FORM OF DOUBLE HARE-LIP, COMPLICATED WITH DOUBLE-FISSURED PALATE; ENORMOUSLY DEVELOPED SEPTUM AND INTER-MAXILLARY PROJECTION, ALL FUSED INTO A SHAPELESS MASS; OPERATION; RECOVERY, WITH SCARCELY ANY DEFORMITY.

CASE I.—*Elephantiasis Arabum, affecting the Lower Extremity, Successfully Treated by Ligature of the Femoral Artery.*

The disease, elephantiasis arabum, though being a rare and unusual affection in these climates, yet occasionally presents itself as attacking the vulva, the scrotum, and more frequently, the inferior extremities. At the same time, I do not wish to convey that it is confined in its localization to these particular parts of the body. I met with it, years ago, in a well-developed form, affecting the hand of a young woman; and of this remarkable case I have a fine cast in my collection. At present I shall confine my observations to the disease, as affecting the lower extremity.

Not unfrequently the affected person solicits the aid of the operating surgeon when all medicinal agents and applications have failed to restore the limb to usefulness; or, later again, when they prove inert, totally abortive, valueless in alleviating pain or procuring repose. Pathological inquiry unveils the progressive disorganization, in extreme cases, of the bones, as well as of the soft parts, and the manifest alteration in their vessels of supply. Yet here the exposition stops; there has been, to the present time, no revelation of the mysterious influences which bring them about—that wrought them.





The person afflicted with this intractable malady, finding no mitigation of pain, appeals at last, I say, to the operating surgeon for the removal of the limb; and such a demand has, necessarily, in many cases, been complied with. Yet this extreme resort has proved itself not always successful, the disease returning on some other member with all its original inveteracy and obstinacy. Great credit is due to the judgment and skill of Professor Carnochan, of New York, who devised a successful treatment for this complaint—even the bold step of ligaturing the main artery of the limb.

The following case gives a faithful picture of the disease, as well as of the application of this new operation—ligaturing the femoral artery—with a view to modifying the morbid nutrition of the limb, now, for the first time, performed in either this country, England, or Scotland:—

Margaret D., aged 44 years, admitted to Mercer's Hospital, Nov. 6th, 1861, suffering, in a most pitiable way, from elephantiasis of the right lower extremity. During the last 18 years she has been, in a mitigated or increased degree, labouring more or less under this affection. Years ago, even before the above date, the limb imperceptibly, at least unperceivedly, became "weighty," "dull in its movements," and quickly tired on exertion. Months passed over without any marked symptoms appearing to create alarm or distress. However, about the time noted above, a change became so manifest, evidenced by a gnawing, dull aching in the part—persistent, unchangeable, unalterable, day or night—that willingly she sought advice. Various means had been tried to check the increasing size of the foot particularly, for here, first, the increase of volume was perceptible and marked—changes that, in a short time, were propagated to the leg. Gradually and steadily, for years, accessions of engorgements had taken place. Over and over again depositions, it would appear of new material, had been superadded, with only occasional periods of repose. Compelled thus, I would say, she inquired and sought after relief; and though some of the expedients adopted had been felt to temporarily arrest the morbid degeneration, and the painful augmentation of bulk, and thus for a time afford comparative relief, yet never was the part seized on by active plethora without its traces and evil consequences—additional deposits—testifying to its having been there. Thus, year after year of suffering and confinement passed by, relief only being experienced sometimes, and in a slight form; and she

had to endure privations, more or less, from inability to follow her occupation as a laundress with steadiness and certainty.

Over and over again she sought relief both from private and hospital resources; but the best directed efforts were only palliative, and that as long only as perfect rest, quietude, and repose were adhered to in the recumbent posture; and these restrictions were incompatible with her mode of life—her means of subsistence. A few hours walking about would reproduce an excess of swelling and exacerbation of pain, with all the bursting engorgement, that it took weeks to partially disperse, as I have myself witnessed. Several times she solicited the removal of the limb, so great a burden had it become.

On her admission to Mercer's Hospital, her condition was most painful to witness—her case truly pitiful. Neither by day or night could she obtain sleep or rest, owing to "the terrible pain in her leg and foot;" and certainly the limb presented a most serious aspect, engorged to that extent with bright arterial vascularity in parts, that might have been supposed to threaten its vitality by excess of action—conditions most manifest about the calf and two upper thirds of the leg. The foot exhibited a more subdued colouration; yet, over all, pressure was inconvenient, in many parts painful, in some intolerable. Again, the discoloured part above was tense, polished; while about the ankle, the integuments presented large, elevated, thick-set welts and nodules, covered with an irregularly projecting scaly coating, almost resembling patches of ichthyosis. The dorsum of the foot and outer ankle were particularly marked in this way, while deep sulci crossed the anterior aspect of the ankle, which was devoid altogether of such an arrangement of tegumentary membrane, being smooth, pinkish in shade, and, as it were, bound down or matted to the anterior annular ligament, while the elongated masses of the pendulous integument of the leg above, overhanging these deep sulci, and of the dorsum of the foot, inferiorly were rugous in the extreme, and discoloured with a brownish hue. Owing to the repeated attacks of engorgement, the toes at length suffered, and a very unhealthy form of ulceration settled on each, beginning at the outer side of the great toe, and seizing in turn on each of the other four, and steadily, though slowly, destroyed their extremities—that is, their normal, healthy structure; leaving in its stead a replacement of irregular granulated masses, highly sensitive and impoverished in consistence; and this marked the only effort at repair. Such condition added greatly to

the sufferings of the patient, as in this mutilated state every laboured effort at progression was made by the imposed weight directed on the heel. Altogether the limb was of large dimensions, as exemplified in the plate executed by Mr. Forster from a truthful drawing.—(See Plate I.) The following were the measurements of the diseased limb as contrasted with the sound one:—

	<i>Sound limb.</i>	<i>Diseased limb.</i>
Thigh, above knee, - - -	15½ inches,	17½ inches.
Calf of leg, - - - -	14 „	19 „
Above the ankle, - - -	8 „	16½ „
Around arch and dorsum of foot,	10 „	15½ „

Having carefully considered the hopelessness of any further attempts, either by medicinal agents internally, or as external applications, and the uselessness of pressure and bandages to reduce, even temporarily, the massive proportions of the disabled limb, and not wishing to comply with the repeated entreaties of the woman to remove it by amputation, I naturally considered the expediency of ligaturing the femoral artery. At the time that Professor Carnochan's valuable paper, "Contributions to Operative Surgery," came to my hand I was very forcibly struck with the originality of his proposal; and, from all that I was acquainted with as to the pathology of the affection, I saw no valid reason to dissent from his views, or refuse to accept the truthfulness of his statements as he propounded them to the profession.

On the morning of the 25th Nov., 1861, I prepared to operate after the following manner:—The patient was placed upon the operating table, in the horizontal position, on her back, and brought under the influence of chloroform. During its administration she was comparatively quiet, yet not so tranquillized as might have been desired during the steps of an operation surrounded with considerable difficulty, owing to several causes—the natural bulk of the limb from excess of fatty deposition, the additional increase of its volume from abnormal changes, and, as a sequence from both, the great depth of the artery from the surface. Other hindrances were likewise foreseen, as shall presently be detailed. But to proceed with the operation. The thigh was very slightly flexed, and rotated outwards, and steadied so by assistants, above and below; the knife was first laid on its edge, applied about an inch and three quarters below Poupart's ligament, and at a point midway between the spine of the ilium and the crest of the pubes. This was selected as the

proper position—that in which the vessel might be found, for no pulsation marked its course, it lay so deep and buried; the artery could only be even imperfectly felt passing over the pubes, for it there seemed to recede so suddenly from the surface, deep down into the limb, that no information or assistance as to its course could be derived from the heart's impulse transmitted to its walls. From the point mentioned, then, the knife was carried downwards in the axis of the limb for fully five, nearer to six, inches, being rather over the external wall of the vessel—my object being to keep out from the saphena vein, which was very large and somewhat outside its usual position. The first stroke of the knife opened a wound to the extent mentioned, and, through the integuments, fat, and superficial fascia; the depth of adipose tissue was fully an inch and a half. A small opening was next made in the fascia lata of the thigh, a director passed beneath it from below upwards, and so it was divided throughout the entire extent of the wound, the knife traversing the groove of the director rapidly. At once the inner edge of the sartorius muscle came into view, as also a portion of the sheath of the vessels; the internal edge of this muscle was gently drawn outwards, and retained so by a retractor, while the opposite side of the wound was similarly held apart, and in the contrary direction. At the lower part of the wound, where the sartorius was crossing the vessels, the sheath was carefully raised up with a forceps, and a small opening made into it with the knife held horizontally, and its flat surface towards the vessels; the sheath was then slit to about half an inch, and instantly the femoral vein, filled with dark blood, was thrust up owing to its engorged state, rolling itself, as it were, over the arterial trunk, and projecting through the opening in the sheath.

The transposition this brought about demanded the greatest caution as to the method of procedure. I carefully passed a director between the vein and anterior wall of the sheath, and slit it to the extent of half an inch more; no turning off or unfolding of the sheath was had recourse to; this simple division released the artery in front; no meddlesome interference disturbed it in its bed, either vertically or behind, and the great advantage was gained of relaxation of the constriction apparently exerted on the protruded vein, and a facility was allowed for examining the condition of the artery and its relationship to the parts accompanying it. The enormously increased size of both vessels was now apparent. The vein, fully an inch in width, was gently lifted off the artery, and carefully

pressed downwards, backwards, and inwards, while the internal edge of the wound was held in a like direction; this arrangement brought into view, resting on the artery, the saphenus nerve, which was drawn outwards, together with the external edge of the wound. Thus the artery was exposed, and its appearance was by no means encouraging; it was of unusual dimensions, fully twice its natural size, if not greater; it was more flaccid and considerably paler than the artery when exposed in this region under the ordinary circumstances demanding its ligature; in other words, the artery presented more the appearance vessels of the same magnitude assume in the lower animals, as in the horse and the cow, than that met with in the human subject. Having thus proceeded, the next and difficult point was to pass the aneurism needle between the vein and artery without wounding the former. In ordinary cases this can be effected securely enough. In some cases of popliteal aneurism an unnatural intimacy is established between these two vessels, even so high up as the site under our immediate consideration; and I shall not pass on without mentioning the name of the enunciator of this practical fact, my deeply esteemed and most distinguished friend, the late Professor Porter. The intimate connexion, I repeat, between the vein and artery is, in some of those instances, so decided as seriously to endanger the integrity of the weaker vessel on the attempt being made to ligature the artery. I have seen the vein wounded in the attempt being made to pass the ligature round the artery, and suppurative phlebitis, as a consequence, destroying, in a short time, the life of the individual. In another instance I have seen the vein pricked with the needle; blood gush up rapidly, which was restrained until the artery was securely tied; compresses then carefully retained over the point of the bleeding vein; mercury administered quickly; salivation produced, and no ill consequences follow. The intimacy of the cohesion between the vein and artery in this region should never be lost sight of or under-estimated by the operating surgeon; for, in some instances, unless the aneurism needle be used with gentle, yet steady force, in the proper curve of the artery, it will go astray, and in preference, wound the coats of the vein so that the instrument may readily pass into and conduct the ligature through this vessel, thus transfixing it; and, when the cord is tied, the anterior wall of the vein is included in the noose with the artery, and strangled with it, occasioning inflammation of its lining membranes, diffuse in its character, progressive in its consequences, fatal in its result.

There is a beautiful preparation in the pathological department of the Museum of the College of Surgeons illustrating this fact. The preparation is marked B. c. 276 (Organs of Circulation), and was placed there by the late Mr. Rumley. He operated upon this case, tying the femoral artery for popliteal aneurism in Scarpa's space, and unfortunately wounded the vein and included a part of it in the noose with the artery, producing well marked symptoms of phlebitis, which quickly carried off the patient. Great praise is due to Mr. Rumley for depositing this invaluable preparation in the college as a beacon to warn others of the danger. And many will, I am sure, remember how earnestly he dwelt upon this case when examining upon the subject of the treatment of popliteal aneurism by ligature, when Chairman of the Court of Examiners of the Royal College of Surgeons in Ireland.

Having made this digression without, I am confident, diminishing or detracting from the practical utility of the case, I shall now dwell upon the manipulation I had recourse to for the safe guidance of the ligature under the extreme difficulties met with in the remarkable example I am detailing. The lips of the wound being steadily held apart, by retractors in the hands of assistants, the vein was pressed inwards and backwards, together with the internal side of the divided sheath, and fixed so by the index finger of my own left hand. Marking well the line of junction of the vessels, the knife was lightly and gently drawn vertically upon it, so as merely to divide the most anterior connecting shreds—and this only for about a quarter of an inch, just to permit the point of the aneurism needle to be fairly laid between the coats of the artery and that of the vein. The right hand, considerably depressed, holding the needle, permitted its curve to lie first over the anterior wall of the artery, its point resting on the prepared space for it just mentioned. The handle of the instrument being then gently elevated, and gradually yet steadily brought forward, while all along a force was communicated to the instrument, pressing its point deeper, at the same time in a semicircular way, well up to the artery; all the time in this movement an up and down motion in the axis of the vessel was employed, the more gradually to insinuate the point as it progressed round the vessel; and so the instrument was safely made to appear on its external side, with a shred of fibrous membrane over it—which, being divided by a touch of the knife, left its eye exposed for the ligature. A firm well-rolled waxed silk ligature was passed through it, and then the

instrument withdrawn, conducting, by this backward movement, the cord safely beneath the artery. The strain of the retractors being taken off, and all the parts moderately relaxed—the artery entirely so—the ligature was tied, and resolutely so, in order that the internal coats of the vessel might be fairly divided. The first tension on the cord was not hastily made; a little dexterous manipulation was employed to ward off—to deliver the artery from being corrugated in the constriction, owing to its inordinate size. So far the difficulties were overcome—the integrity of the vein unharmed; the artery tied so as to secure division of its coats with but little disturbance of it in its natural bed. One end of the ligature was now cut away, and the other brought directly through the wound, the lips of which were accurately laid in apposition, and retained so by six points of wire suture, between each of which a long strip of adhesive plaster was placed, and effectually supported three-fourths of the circumference of the limb, thus securing the maintenance of contact throughout the entire depth of the wound. The foot and leg beyond the knee were equally rolled with a flannel bandage, so as to yield the gentlest pressure, and to afford heat, or guard against its abstraction. The patient quickly rallied from the chloroform, and was then carefully conveyed into one of the small wards adjoining the operating theatre, and placed in a bed, comfortably heated. The limb was slightly flexed, and gently rotated partially outwards, and supported and sustained evenly, on all sides, in this attitude, by soft pillows.

In an hour after the operation the limb fell remarkably in temperature, and a good deal of pain was complained of about the knee and ham, when, in addition to the flannel bandage, the limb was wrapped up in cotton wadding, and heated jars placed along its sides, and also to the sole of the foot; a large opiate, with wine, was given, and repeated in two hours.

4 o'clock, p.m.—Heat perfectly restored throughout the limb, from one extremity of it to the other, and the pain considerably diminished. The patient had some sleep at intervals. Opiate and wine repeated.

9, p.m.—Heat of limb considerably increased, so removed the entire of the cotton wadding, leaving the toes only covered by it. The patient now free from all pain. The opiate to be repeated twice in the night.

Nov. 26th.—Slept occasionally through the night. Pulse 98; steady in its beat. Complains of some nervous pains about the knee

and ham; no tenderness in the wound, which looks most satisfactory. She referred some spasmodic pains to the abdomen, such as she was frequently in the habit of experiencing before the operation. Now, as formerly, they yielded to very hot turpentine stupes.

On stripping the limb, it was observed by all the students how warm and natural was its temperature; and when tested by the thermometer it proved equal to the sound one, while the most striking characteristic of all was evidenced in the diminution of its bulk, the integuments in some places being absolutely flaccid. I again carefully rolled the foot and leg with a flannel bandage, to above the knee, gently and with a very equable support, then rested it throughout upon the pillows as before, slightly flexed at the knee, and somewhat rotated outwards. The opiates to be continued through the day.

4, p.m.—Going on most favourably, the nervous pains sometimes absent altogether. Expresses herself as deriving the greatest comfort from the increased pressure effected by the readjustment of the bandage. Temperature of the limb excellent.

9, p.m.—No pain, and inclined to sleep quietly.

Nov. 27th.—Slept for lengthened periods uninterruptedly; no pain of any amount. Bandage slackened; yet I did not wish to disturb the limb, even by lifting it, so soon again, for fear of interfering with or interrupting the reparative process in the wounded artery. Opiates freely; four ounces of wine, and beef tea.

9, p.m.—Has spent a quiet day; scarcely any nervous pain.

Nov. 28th.—Slept well; took some breakfast with appetite; limb free from pain. Readjusted the pillows. No tenderness or uneasiness about the wound; foot and leg preserving their natural temperature. To have beef tea, four ounces of wine, and full opiate at night.

Nov. 29th.—Slept well; pulse, 98. No pain in either wound or limb. Removed the bandage; limb reduced as to bulk in a most remarkable way, and its natural temperature perfect. Another very important change has been brought about—the absence of the acute sufferings which the patient experienced in the ulcerated and eaten-away toes. I dressed them to-day without pain, though hitherto she experienced the greatest agony on their being touched. New skin is forming in many parts, whilst in others cicatrization and healing is established—the excess of vascular action being removed, which, according to my views, killed and perished them, as parts die from excess of inflammation. To continue full opiate at night, four ounces of wine, beef tea, and bread.

Nov. 30th.—Complained of great sensitiveness and pain in the wound this morning. On examination, parts were reddish, and evidently pus pent up; so I clipped, with a scissors, the adhesive straps, and cut two of the wire sutures and withdrew them. Matter appeared at the centre of the incision. No undue pressure of any kind was exerted upon it, and the tender, sensitive wound was covered with a soft linseed-meal poultice, half-an-hour after which all pain dispersed. Took her food at the regular hours, as usual.

3, p.m.—Free from pain; opiate repeated.

Dec. 1st.—Pain absent during the entire night, and she slept quietly. The wound looks well, matter oozing up from the vicinity and around the ligature. All redness and puffiness gone. Temperature of the limb admirable. Poultice continued, and full opiates repeated every third hour, so as to quiet the whole system, and so act as a guard against hemorrhage.

Dec. 2nd.—No pain; wound suppurating; tenderness all gone; limb greatly diminished in bulk; wine, four ounces; beef tea; and full opiates every third hour; poultice still continued to the wound.

Dec. 3rd.—Wound suppurating kindly; to continue the opium.

Dec. 5th.—No pain whatever; wound flaccid; no redness; ligature lies quiet; limb gradually diminishing; and ulcers on the toes just healed.

Dec. 12th.—Wound all healed except where ligature comes out.

Dec. 15th.—Wound quite firmly united, except the immediate point where the ligature comes out. The cord has been most carefully protected, all through, lest any sudden drag or violence should be offered to it. The diminution of the bulk of the limb is still progressing in a very remarkable way.

Dec. 22nd.—A most striking change has taken place in the cuticular covering of the limb, all the scales have dropped off, leaving the skin smooth and even on the surface; the patient has now the power of moving the toes quite freely, and they, too, are greatly reduced in volume. Ligature still in its place, the slightest trace of purulent matter along its track; no attempt whatever made to hasten its detachment by that reprehensible practice of pulling gently upon it from time to time.

Dec. 26th.—I cannot express the satisfaction which I felt this day at finding the ligature safely cast off, and lying on the cicatrix, 31 days exactly after its application. Limb remarkably reduced since last adjustment of the bandage; applied one with greater firmness than before.

Dec 28th.—Wound all healed now, the track of the ligature being sealed up.

Jan. 6th.—Diminution, progressive of the limb; administered mercury so as slightly to bring the system under its influence, and had the limb freely anointed with iodide of lead and iodide of potash ointment; frictions with this application were had recourse to morning and evening, caution being observed that no breach of surface might be occasioned, yet at the same time pressure of a moderate and steady kind was insured, and the dressings so saturated with the compound that the absorbents were stimulated and assisted in their action as far as could be accomplished. For four months this treatment was energetically and strenuously carried out, and so likewise gradually absorption was promoted. Soon the motions of the ankle joint were moderately permitted; but as the great, massive, dense welts of morbid tissue, above and below the angle of flexure, were removed, so likewise the movements became more extensive, and, as time passed on, were at length gradually perfected. The motions of the great toe—which, together with the four others were locked, as it were quite removed from under control by the massive preponderance of new material—to a certain extent participated in the same marvellous change. I have qualified the amount of restoration; for two of them, the second and third toes had grown together, were matted into each other by early ulceration, granulated surfaces side by side, pressed closely to each other and cicatrized. However, the most important portion of this part of the foot, the great toe, became perfectly loosed—its actions perfect. At this time the patient regained full control over the motions of the foot, evidenced by complete flexion and extension, without the slightest pain. To so great an extent was the limb reduced, and so soft and pliable had the tegumentary covering become, that the tendons and muscles could be traced in their course, as they started out in action, when performing their movements; altogether the size of the limb was but little larger than its fellow. At the end of the sixth month the patient was able to walk well upon the limb, without pain or uneasiness; she expressed herself as feeling an indescribable relief from the burden which had so oppressed her for years. Though moving about and walking through the wards all day, no additional swelling followed, and never a return of pain. Shortly after this the patient left the hospital and resumed her occupation as a laundress; frequently since I have heard the most satisfactory reports as to her condition,

and the ability with which she is able to pursue her laborious business throughout the whole day, standing nearly the entire time, yet neither swelling, fatigue, or pain is occasioned by her doing so; the precautionary application of a bandage is never dispensed with. So far as the history now goes the case has, I would say, been eminently successful; as to the permanent nature of the cure, time has not yet sufficiently passed by so as to afford a practical answer.

CASE II.—*A Fourth Successful Case of Excision of the Knee Joint; with the exception of the Knee being rendered Firm and Rigid (the Perfection of Cure), all the Functions of the Limb Fully Preserved; No Deformity whatever.*

I have great pleasure in publishing this my fourth successful case of excision of the knee joint. It is a fine example of all that may be achieved. I have only operated upon the four cases; all have been equally successful, as the published records can testify. While I wish to direct the attention of the profession to this, the last, I claim my right to stigmatize the pusillanimous efforts of those who, knowing but little about the operation, strive, with an unworthy motive, to silence truth. I recently brought this most important subject before the Surgical Society of Ireland. It will be seen by a reference to the *Medical Press* (February 11th, 1863), how significantly the opinions of all those practical hospital surgeons who spoke harmonized in their approbation of the theme, and, according to the definite bearings laid down to a demonstration, lauded and upheld the propriety of the measure. Such an approbation, emanating from such an ordeal, should be quite sufficient, in my mind, to calm the sceptical. If the mariner errs from the track laid down, marked in difficult shoals, by his obstinacy or incapacity for decision, the fault does not rest with him who has buoyed the path. I regret deeply that time does not permit me now to complete some strictures, and severe ones, too, which I am engaged in drawing up upon the cases which have been published, and the tables derived from false data, upon this most important operation. It seems abundantly clear, from the facts collected by Dr. Hodges, as well as from the practice of Langenbeck, that the operation has been far too confidently adopted, and that the great proportion of its failures arises from operating on diseases or on patients unfitted for its use.

What can we say of resections for malignant disease (Langenbeck, table No. 183)? Surely such operations as excision of the knee

for malignant disease of the patella can have but one issue; yet in Langenbeck's table several excisions are mentioned as having been undertaken on account of tumours, which are either examples stated to have been malignant, or which in all probability were so; of resections performed on children four years of age, who die of caries of the spine before the wound has had time to heal (*Ibid*, No. 188); of resections undertaken for acute abscess of the joint when pyemia had already commenced (*Ibid*, No. 184). Except that, notwithstanding the reputation and authority of the surgeon in whose practice they occurred, they are merely examples of what ought to be avoided, and of a style of operating which tends to retard the science, the art, and the progress of surgery.

Joseph Magher, aged 20, admitted to Mercer's Hospital, Feb. 14th, 1862, with incurable disease of the knee joint. A year and a half before the above date the man was suddenly seized with acute pain in the left knee joint, after a long and wearying walk. Next day he could scarcely move the leg upon the thigh, so sensitive and alive was the part to pain on the slightest disturbance. This state continued for more than a week; but ultimately abated by rest and confinement to bed, by repeated application of leeches, and constant stuping of the part. At length, at the expiration of nearly four weeks, the man was enabled to go about, making very imperfect use of the limb, marked by a considerable halt and unsteadiness in progression. From this time, consecutively, at intervals of a few days, up to four weeks before his coming under my charge, he was repeatedly compelled to yield, and give the limb rest. At the latter date he became perfectly invalided, incapable of placing the leg under him at all, and subjected to the most wearying, gnawing pain in the joint; and now all his sufferings became gradually augmented: the joint became more swollen, more discoloured, and more sensitive to increased agony on the slightest touch. Consonant with these local annoyances were the constitutional disturbances evoked—fever developed in its most marked and typified form. I shall endeavour to describe briefly the local and constitutional changes manifested when he was received into hospital. I saw the patient lying in bed; and on stripping down the clothes the serious nature of the disease was remarkably portrayed—the thigh and leg were thinned and emaciated, while the normal configuration of the knee joint was altered altogether. Above the knee and in its lateral boundaries the increased dimensions were most marked, dependent upon two

causes—owing to enormous effusion of pus and serum within the joint, and throughout the entire extent of the great bursal structure beneath the extensors. Thus the lower end of the thigh was rendered most conspicuously prominent, while the internal wall of the joint was very defined and sharp, depending upon morbid alterations effected in the internal condyle of the femur and the corresponding articular surface of the tibia. The limb was flexed, the leg upon the thigh, the patient resting towards the left or affected side; the knee and leg well propped up, supported by pillows, while, to steady the foot below, the right one lay, as it were, acting the part of a cushion under it. The integuments over the entire joint were discoloured in the extreme, being of a purple livid hue along the internal surface of the joint, and above and below for several inches. The slightest weight upon the part caused the greatest suffering. The lightest manipulation was at once resented by spasms of the limb and screams from the patient. The gentlest movement of the patella backwards, or of the leg upwards against the femur, seemed to evoke them in the most formidable way. The whole line of junction, corresponding to the articular surfaces of the femur and tibia, when brought in apposition, was easily tracked out by the point of the finger gently passed along, though concealed deep beneath the external depositions and effusions already adverted to as distorting the natural configuration of the joint.

From this examination it was quite apparent that thickening of the synovial membrane—chronic changes which had been slowly, steadily going on—had now reached their maximum; that the cartilages of incrustation, both of the tibia and of the femur, had likewise been attacked, and had perished extensively—nay, more, that even the bones were implicated, and had become accessory to the fearful suffering and constitutional derangement. So violent was this constitutional sympathy, attendant on the rapid disintegration of parts, that life was seriously threatened. The patient had no sleep, day or night, nor did he even by the use of opiates doze for awhile. The limb was convulsed, and jerked from the bed with agonizing pain. The apprehension of this terror made him vigilantly guard and struggle against repose when the pain was mitigated or subdued in its character, for at intervals there would be short respites; sleep might be had were it not for the certainty of this formidable intruder. The countenance of the patient bore testimony to his sufferings. He had an affrighted look from over watchfulness; his eyes were bright, anxious, vigilant; the face thinned and flushed; the

hair dull, standing, matted from dried perspiration; the whole body emaciated, fingers appearing elongated, transparent; respiration short, rapid; pulse, 130, small, weak; speech quick, irritable. Before the patient came to hospital the sweats were profuse, night after night, and constantly alternated with diarrhea. The same distressing elements of hectic were as fully manifested after his admission. The most careful examination of the chest was made, and no deposition or impaired structure could be discovered in the lungs. The same rigid inquiry was likewise applied to other vital organs and to other cavities. After a most painstaking investigation the conclusion I arrived at was, that the fearful irritation, the destroying fever, was occasioned by the diseased joint, disintegrated throughout; and experience pointed now to operative surgery as the only means by which to rid the system of its source of pollution. After the most minute examination of the part, I came to the conclusion that the case was well adapted for excision of the joint. The bones did not seem extensively engaged beyond their articular surfaces; and, though I had no doubt of the total disintegration of the articular surfaces, yet there was no distant enlargement to lead to the inference that amputation should be had recourse to. This was my own firm conviction, and I decided upon excision; and on the 19th of February, 1862, I operated according to my usual custom, and after the following manner:—

The patient, supported by students in the horizontal posture, was brought into the operating theatre; the limb steadied at its angle of flexure on a long piece of board, to guard against the least shaking of it—the same which he had used on his removal from the country. I lay stress upon this mode of management, as confirmatory of the disorganized condition of the joint, which could scarcely bear the least tremulous motion even, without eliciting pain of the most acute character. Chloroform was now used with its most perfect effect—calm, total insensibility.

Standing on the left side of the patient, I divided the soft parts by a bold deep stroke of a heavy scalpel. The wound commenced below, over the head of the tibia, and was carried directly upwards for five inches, laying freely open the inner wall of the joint. An incision, similar in extent, commencing over the head of the fibula, was carried upwards through the outer wall of the joint; the two were then connected by a transverse cut below the patella; this at once laid freely and fairly open the joint; the superior flap was dissected upwards; then flexion of the limb was forced, to put the

fibrous structures externally and within the joint fully on the stretch, and so facilitate their more ready division. The former included shreds of the lateral ligaments, and spread out fibres of the involucrum, whilst the latter embraced the crucial ligaments which had only partially perished, a limited destruction which will most satisfactorily account for the non-displacement of the articular surfaces of the tibia and femur from their rightful axis. The parts being thus divided, the lower flap was detached somewhat downwards, whilst the edge of the knife was kept very closely up to the posterior surface of the tibia and back of the condyles; the immediate connexion of parts were thus thoroughly freed from their adherence to the line beyond the articular surface on either bone; and this is all that is requisite, as then the finger will detach, by vigorous pressure, the soft parts from the bones to the required extent, in this their posterior aspect. By this simple manipulation the artery is not only secured from injury, but it remains undisturbed in its bed, and the popliteal space is not encroached upon or its anterior wall broken up. The extremities of the long bones being thus denuded to the required extent, I dissected out the patella from the upper flap; it was scarcely diseased—only to a very small extent; the margin of its cartilage was highly vascular, and its edges softened; but, independently altogether of its aberration from a healthy state, I removed it as a part useless to be kept. The extremities of the femur and tibia presented a very different condition; here the amount of disease was most marked; the cartilage over the condyles of the femur had nearly all perished, while that which remained hung in shreds; the osseous tissue was eaten away in some places to the depth of a quarter of an inch. The tibia presented a like disintegration of its articular surfaces; not only were the inter-articular cartilages altogether removed, but the cartilage of incrustation was eaten away to a great extent, there being no trace of that covering the external articular surface, while that covering the internal one was detached altogether, lifted up in the centre by sharp debris of bone—the bone subjacent being eaten away freely, and all depressions and cavities filled with a dark sanguineous fluid. I removed the exposed surface of the tibia by passing the blade of my own saw behind it, and cutting from behind forwards, removing a slice about half an inch in thickness; the proceeding was effected with great rapidity, and the section was all that could be desired; the bone was healthy, as revealed, and the surface smooth, and even as a die. In like manner, the section of

the end of the femur was made from behind forwards, the line of division passing about the eighth of an inch higher than the sulcus between the condyles; the edge of the fine saw being made to enter the bone exactly corresponding to where the soft parts were pressed back from it, a few cautious rapid movements of the instrument completed its separation. Thus, about an inch and a-half of the femur was removed; and in this was safely included all the bone that was diseased or implicated in the mischief. I shall here, again, impress the caution that was observed in the direction of the blade of the saw, so that when the femur was fairly extended in the horizontal position for adaptation to the tibia, the section might be perfectly vertical, so as to allow the most even adjustment—surface applied to surface throughout.

The cancellated texture divided by the saw was most healthy in character. I next clipped away, with strong curved scissors, masses of gelatinous material incorporated with the disorganized synovial membrane, and the extensive bursa beneath the extensor tendons, which likewise was deeply implicated, being thickened, discoloured, and vascular, and filled with fluid. So degenerated was all this tissue that I dissected the entire away. The bleeding was arrested by ligaturing four or five arteries. The limb was now brought, with facility, into the horizontal position, and it was astonishing how evenly and well the bones lay in apposition—throughout every point in contact. The anterior wound was brought together with four points of the silver suture, and the extremities of the lateral wounds, internal and external, were in the same manner approximated and retained together, while the centre of each was left free and gaping, to allow of the ready discharge of fluids. The limb, rigidly held, was then lifted from the table, and the box used by me for such purposes steadily slipped in; pads were so arranged that when the limb was let down its posterior surface was evenly supported throughout, the normal gentle curve of the ham being preserved; at the same time the heel elevated, pressed forwards, the entire member lying as straight as possible. The sides of the box were in turn elevated, the foot support put in to maintain the tibia pressed up to the femur, pads on either side so as to secure rest, to prevent wabbling. The anterior splint, the use of which in former papers I have laid so much stress upon, was then laid on, properly padded, the straps buckled round all, steadying the entire as one piece, while the body-belt was thrown round the trunk and fastened, so as to keep the long arm of the splint close to the side, and by so doing ensure the security of the limb in its proper axis.

The patient rapidly rallied from the effects of the chloroform, and was conveyed, perfectly supported in the horizontal position, from the operating theatre, and placed in a comfortably heated bed. So efficiently did the anesthetic act, that when the man awoke to consciousness he was astonished to hear that the operation had been performed, as he had not the least remembrance of pain.

A careful examination of the portions of bone removed confirmed, in a most striking way, the great accuracy of the diagnosis, and beautifully illustrated the total disintegration of the articular surfaces, with deep and wide-spread caries of the osseous tissue in numerous places, all indicative of incurable disease, and an efficient cause of the withering fever that threatened life.

Before proceeding with the history of the case, I must say a few words about this very valuable saw which holds my name, and is used by me in all resections and amputations. In a work recently published, entitled *A System of Surgery, Theoretical and Practical, in Treatises by various Authors*, I find allusion made to this most useful instrument, in a feeble, meagre article, forsooth, termed "Resection"—such a production, both in style and matter, as would place a second year's student last in his class. I perceive a review of the book in the *Dublin Medical Press* for February 18th; and I will allow the reviewer to condemn the ignorance and want of information displayed in an article which should at least yield the facts and directions laid down in every text-book, and recognized by all well-educated surgeons. The reviewer thus speaks:—"The chapter upon 'Excision of the Joints,' or, as we call it in Ireland, 'Resection,' is only remarkable for the suppression of everything Irish that has been done in this branch of operative surgery. Mr Butcher, who has been particularly prominent in resection operations, has had his name introduced only for the purpose of vilifying the saw recommended by him, which, says the author, 'is rather liable to bend, and the blade is apt to get loose;' though we find it difficult to understand how such can be the case if the saw be well manufactured, the blade properly screwed up, and the surgeon have learned how to run such an instrument lightly and evenly."—*Dublin Medical Press*, Feb. 18th, 1863, p. 170.

The objections urged against the saw are too contemptible for me to dwell upon. Its great advantages for the purposes of resection I have pointed out in my memoirs on the subject of excisions of joints. Every modern work on surgery, and surgeons who have worked in this department speak loudly in its praises. By a regulation of the

Army Board it must be in every case of instruments. Is not all this additional testimony in favour of my saw? Therefore I protest against incapacity robbing the instrument of its merits.

Again, when I brought the subject of resection of the knee joint, a few nights ago, under the notice of the Surgical Society of Ireland, the mode in which the bones were cut by this instrument was particularly adverted to by two surgeons well trained in the use of instruments. Mr. Smyly, surgeon to the Meath Hospital, thus expressed himself:—"He considered it was the introduction of this saw, by Mr. Butcher, and the cutting of the bones in the way in which he did, which were the means of reviving the operation. It was now, however, recognized; for which, he thought, they were also indebted to Mr. Butcher." And thus Mr. Stapleton, surgeon to Jervis-street and the Mater Misericordiæ Hospitals, gave his opinion:—"One thing seemed to him to conduce very much to the success of Mr. Butcher's operations, and that was the admirable way in which the bones were sawn."—*Dublin Medical Press*, February 11th, 1863.

4 o'clock, p.m.—Limb lying remarkably well; no startings, no pain; has had some sleep. Stomach a little nauseated, but quieted by warm punch and opium; has taken some beef tea. Ordered 15 drops of Battley's sedative every fourth hour.

10, p.m.—All sickness of stomach gone; has had some refreshing sleep.

February 20th, 9 a.m.—Had a comparatively good night; far quieter, he reports himself, and more free from pain than before the operation. All the startings in the limb have ceased; no sweat; pulse down 15 beats, being now only 110. Has taken breakfast, some tea and toast. Ordered beef tea and six ounces of wine through the day; and the opiate, as on yesterday, every fourth hour. The limb lies quite easy, and free from pain.

4, p.m.—Was summoned to see the patient at this hour, as much fluid, of a bloody colour, was escaping through the sides of the box. I carefully let down the sides, one after the other, and examined, cautiously, the wounds. A large quantity of serum, mixed with a trace of blood, poured out freely from the exterior surface, where the bursal structure was dissected away, and likewise down from beneath the lower flap; though the serous or watery escape was abundant, yet it was only tinged with blood, not calling for any more positive examination; reapplied the lateral pads, lifted again into place the sides of the box, and secured them by the buckled

straps, as before. During this examination, due precaution was taken to guard against the slightest disturbance of the limb, by gently pressing backwards the anterior splint, while an assistant maintained the leg, foot, and foot-board exactly in the same relationship to each other as they held previous to the sides of the box being let down. Opium continued.

February 21st.—The patient had an excellent night, much sleep, and, as he expresses himself, “relieved from a great load.” The countenance is calm, soft, and evidently that of a person free from suffering. Has taken his breakfast with appetite; wounds dressed after the same order and management as on yesterday.

27th.—Sleeps and eats freely, with appetite; no pain complained of. Limb dressed, with the same cautious handling.

28th.—On this day removed the wire sutures binding the anterior flaps together. It was satisfactory to see that the intimacy of their union was perfect, and there was no discharge from beneath anterior extensive flap, and but little from the side wounds—that coming out quite healthy in character. Limb lying as straight as an arrow. Dressed as before, the side pads gently supporting the lateral parts forward, thus preventing the slightest tendency to pouching. Wine, six ounces by day, and the same quantity at night; eggs, beef tea, chicken, with opiate night and morning.

March 3rd.—Progressing most favourably. The same cautions in the daily dressing, letting down side splints alternately, &c.; and, as yet, the limb has never been raised from the box. To continue all kinds of nourishment.

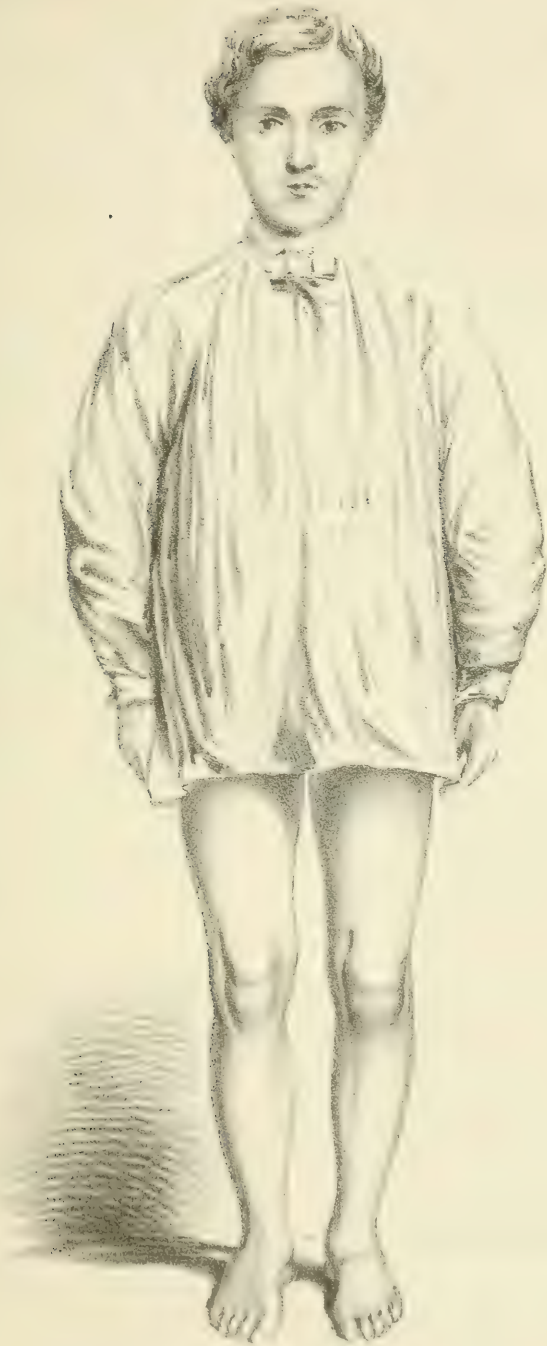
March 13th.—Patient's condition, in every way, most remarkably improved. Pulse 88; he sleeps well, eats abundantly, and with appetite; no sweats. He is visibly gaining flesh. Limb dressed daily; very little discharge, and that which flows quite healthy in character—the sides of the box being alternately let down, while pressure is duly kept upon the anterior splint. All ligatures away. The limb has not yet been raised from the box, though more than three weeks (three weeks on yesterday) have passed by; and by the great carefulness observed, the interior pad has not been unduly soiled or made offensive, so as to call for its disturbance. The patient removed to a fresh bed every second day, duly heated, prepared freshly for him, to secure against chills or cold.

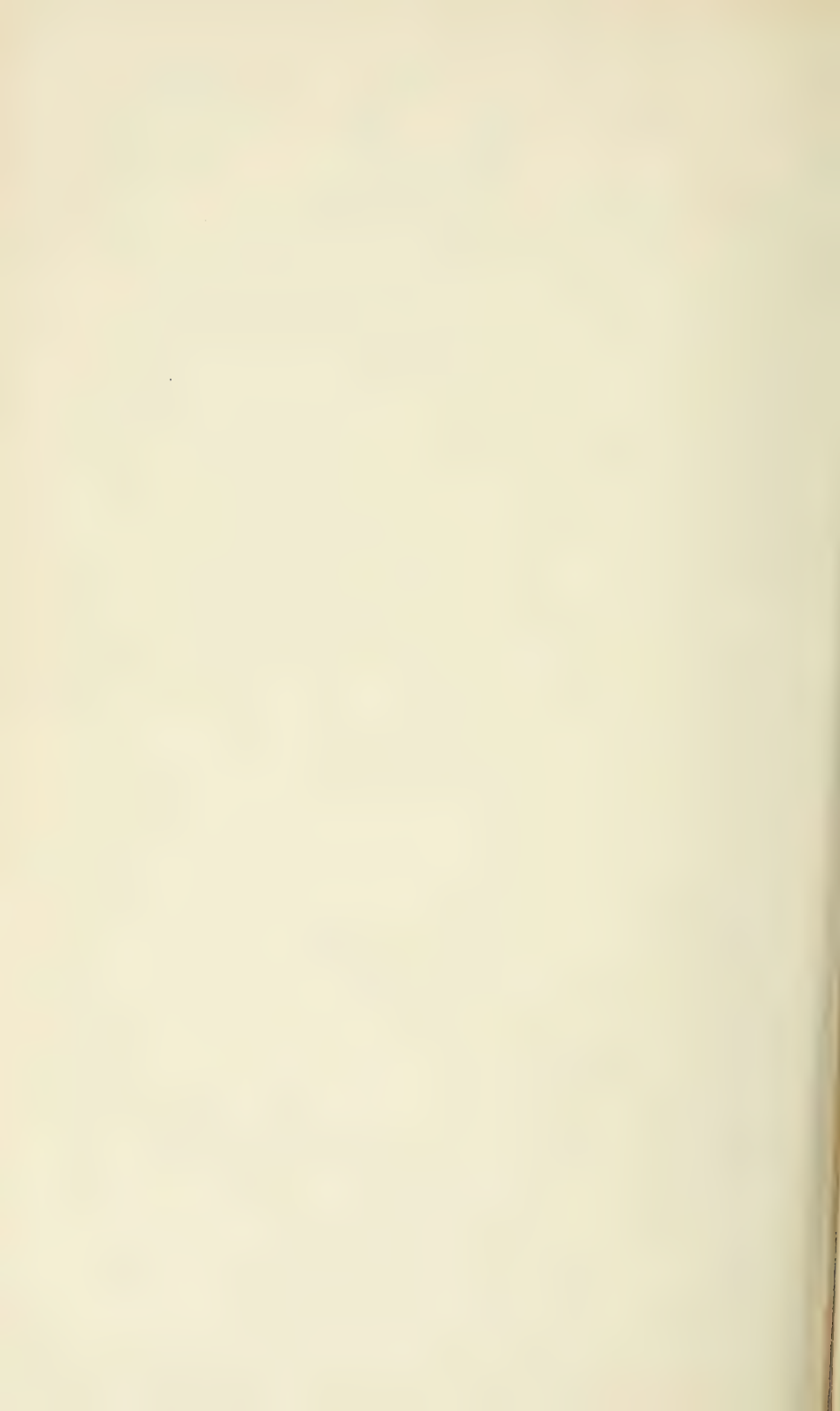
March 17th.—Wounds very rapidly healing; external one nearly cicatrized. Suffers no pain in the wounded part or its vicinity. Eats and drinks with relish, and in abundant quantity. Pulse, 78.

March 27th.—It is now past five weeks by one day since the operation, and now, for the first time, the limb was raised from the box, and fresh pads placed beneath it. So quietly had it rested that there was not the least excoriation or irritability of the surface. The union between the bones seemed to have progressed in a most remarkable way, the bond of connexion being quite rigid and firm. At this time, likewise, all the constitutional disturbance had abated, a true evidence of the subsidence of all local irritation. Now, during the several months which the patient remained in hospital after this date, the same assiduous care was bestowed upon the limb, and so, likewise, the wounds healed gradually, the discharge diminishing. On two or three occasions the formation of small abscesses, that, after being opened and poulticed for a few days, healed up even more rapidly than the time which ushered in their appearance. Never did matter gravitate towards the ham, or indicate, even by premonitory effusions, a tendency in that direction, owing to, and I believe alone attributable to the lateral incisions being placed well back, particularly the external one, for the important reasons which I have already, in former papers, insisted upon with my whole voice.

During the treatment the patient had two attacks of erysipelas, contracted, as I believe, from cases in the ward; by proper management he was happily rescued from both. For many weeks (writing now, Nov., 1862.) he has been training himself to walk, of course by the aid of crutches. It is most remarkable the possession of motion and power over the extremity which the man possesses. He has full ability to flex and extend the thigh upon the pelvis, also the perfect motions of the ankle joint, and the full play of the muscles of the leg. The osseous union established at the site of the knee joint is, as it ought to be, perfectly rigid, not evincing the least tremulous motion—even when advantage is taken by force applied to the most distant extremities of the long bones implicated in the union. He is now a strong and vigorous young man, with the muscular system well developed, and fat freely deposited. His countenance bespeaks rude health, and there is a liveliness and contentment about him most remarkable when contrasted with the woe-begone and wretched-looking creature that he was prior to the resection of the joint.

The admirable likeness preserved in this paper, and drawn by the able hand of Mr. Connolly, faithfully represents his present state.—(See Plate 2). He has long since put aside the crutches, and can





now walk about without stick or support of any kind. When he is at rest and dressed, it would be impossible to perceive any shortening or the least deformity, nothing that the most scrutinizing eye could detect; and when naked (I refer the reader again to the picture) the proportions of symmetry are almost preserved—the axis of the limb is somewhat straighter than the sound one, the gradual inclination of the thigh bone inwards being, of course, not preserved. The foot rests upon the ground, and is as firmly planted as the sound one. The muscular development of the leg nearly equals that of the sound one, while the thigh, by measurement, is fully as large. The vertebral column has compensated for the shortening of the limb, the spine of the ilium being nearly two inches lower than that on the right side; yet the head and shoulders do not droop; there is manifested no change from their strictly normal or horizontal position. The man walks with great freedom from the hip, the motions of which joint are as perfect and as much under control as if the limb had not been rendered rigid at the centre. All the movements of the ankle joint and tarsus being sedulously preserved, contributes, in a very marked manner, towards facilitating progression.

*CASE III.—Successful Excision of the Entire Upper Jaw and Palate Bone for an Enormous Fibro-vascular Tumour; Terrific Intermediary Hemorrhage; Ligature of the Internal Maxillary Artery; Digital Compression kept up Continuously, Night and Day, for Fifty-eight Hours, by relays of pupils, upon Unusual Nutrient Vessels; Perfect Recovery.*

So far back as August, 1853, nearly 10 years ago, I wrote a long paper on excision of the upper jaw, in the pages of this Journal; and in it traced the history of the operation, and the various modes adopted, by surgeons of eminence, for its performance—illustrating my own views as to the best method of proceeding by my own practice. Again, in the number for May, 1860, I gave additional cases, where I only executed a very limited division of the soft parts, at the same time removing nearly the entire jaw bone. In the February number of the Journal for 1861, I was induced to again draw the attention of the profession to this operation—the time was just after Lizar's death; and I wished to offer to the memory of so great a surgeon—of him who originated this bold project—my tribute of homage and praise. Therefore, I selected from amongst the worst and most formidable cases that I had

operated upon, one presenting many points of interest and accumulated difficulties in its execution; and to it I appended many practical suggestions and details. The case was headed thus:—"Successful Extirpation of the Entire Upper Jaw and Malar Bone, for an Enormous Tumour Springing from the Former, Extensively Implicating Both, and Filling up the Parotid Region; Mode of Securing the Patient; Advantages of the Free Application of the Actual Cautery," &c. In all these reports the most accurate lithographic drawings were printed to illustrate the cases, and are well worthy of repeated inspection, so as to convey a lasting impression of what had been done. The cases which I now detail are likewise pregnant with interest, and come in well as examples of the management of furious hemorrhage complicating the operation of excision of the upper jaw:—

Mary Sullivan, aged 80, admitted to Mercer's Hospital, Nov. 8th, 1861, with an enormous tumour, extending over nearly the entire side of the face. She stated that, about 22 months ago, severe pain fixed in the second molar tooth of the upper jaw, on the left side. This pain was more distressing by its constant dull character than from any sharp exacerbations; in a short time the pain extended to two or three more of the teeth, and then it was considered to be neuralgic. At the end of about two months, the teeth began to loosen, and were exceedingly painful when pressed upwards. Soon the anterior part of the bone was complained of, and in February the cheek was slightly swollen. About this time the pain entirely left the tumour; and, even up to the time of her admission, never came back. In about a month later (March) it was becoming apparent that the anterior wall of the maxilla was becoming prominent, as if yielding to some pressure from within. This was the first direction the tumour took in a marked way, and gradually it bulged more and more forward, at the same time encroaching, in a very marked way, upon the nose. For the last seven months, the tumour has increased with a steady determination; and the following was the patient's condition when received under my care:—The tumour certainly was most formidable in all its bearings—(see Plate 3, from a beautiful picture by Forster)—extending from the superior orbital ridge above, to the margin of the inferior maxilla below, and from the ramus and angle of the jaw to the mesial line of the nose. But, to be more particular, on examining the mouth, the anterior part of the palate



AN OLD WOMAN OF THE FIFTEENTH CENTURY



plate of the superior maxilla, corresponding to the incisors, was firm and healthy; while that outside, and contiguous to the molar teeth, was depressed and softened. There was no projection of the growth backwards towards the pharynx, while the mesial line of the palate was not altered or encroached upon; here even the growth was disposed to take an anterior and outward direction, for, far external to the molar alveolar range, a large rounded mass projected and came down. The vascularity of the palate, or of the mucous membrane covering in this region, was not altered in intensity, while pressure and examination caused no suffering. The growth, which bulged outwards beyond the alveolar range, was hard, firm, and unyielding. The upward growth of the tumour was productive of much mischief; the floor of the orbit was raised from its bed, thrust up, partially removed by continued pressure, and the eye pressed upwards. The anterior and external development of the growth was most predominant—a tumour, as large as the two clenched fists, thrust out the cheek, superiorly passing above the eye and brow, occluding the eye, and dragging up the lower lid. Inferiorly, the growth passed on a line with the range of the body and angle of the inferior maxillary bone, while posteriorly it lay across the entire angle and ramus of the jaw, matted to, and incorporated with, the muscular tissue of this region. The tumour, in its backward direction, shot in between the maxillæ. The nasal process of the maxilla was thrust into the nostril, and the tumour, as it was opposed in its growth here, overlapped, externally, the left half of the nose. The surface of the tumour was irregular in the extreme, presenting numerous elevations and depressions—some hard, and as firm as bone—some yielding, crackling like parchment—some elastic, springy—others, fluid and undulating to the touch. On carefully examining its orbital connexions the greater part of the orbital plate of the maxillary bone was found to be removed, the orbital edge of the bone quite soft; and though the eye was thus encroached upon and covered in, the growth had not interfered with the power of vision—had not pressed upon its functional nerve. On forcing down the upper anterior prominent projection, with the lower lid expanded on it, the eye could be brought into view; it was clear, transparent, and competent to receive and appreciate impressions.

And now as to the covering of the tumour. It was tightened throughout, tense in the extreme, ulcerated in many points, to about the size of half-a-crown piece, just below the edge of the

orbit, and also over the most prominent part of the tumour; no fungoid granulations stopped the gap, as the wheyey pus flowed from it. The bulk and pressure of the tumour destroyed the integument. No doubt, the colouring of this growth, in many places, was characteristic of a malignant type; yet I have seen the same in tumours of magnitude, when no such characteristic ever was developed. The integuments, though thin, bright-coloured, permeated by innumerable vessels, yet were free, and could, by gentle manipulation, be made to move—to glide upon the projecting growth; they were not absolutely incorporated with its substance, being only matted just where ulceration had taken place, as already noticed.

The having carefully examined the chest, head, &c., of this old woman, and not being able to detect anything abnormal, constituted one of the grounds upon which an operation was justifiable. There was no evidence of the tumour being malignant *ab initio*—the absence of pain, particularly of any characterized form—the clear, transparent colour of the sclerotics, and the entire absence of any features of cancerous cachexia, pointed to such a conclusion. There was no marked emaciation; no discolouration of the skin, no haggard, anxious expression; on the contrary, the patient was free from pain, of a most lively disposition, never, as she said herself, “being a day sick.” She urged most warmly to have an operation performed, and felt a confidence that she would recover. Some considerations in the history and progress of the case, however, made me reflect most cautiously on the propriety of interference; and it was not until after deep deliberation that I consented to comply with the patient’s wishes, and to remove the part.

No time was lost, and the operation was performed on the 13th of May, according to the following method:—The patient was seated in a strong arm chair, with her head resting against the breast of an assistant. She was further secured by a stout piece of wood passed beneath the arms of the chair and across her thighs, so as to prevent any starting forwards. A sheet was cast around her arms and her body, and the ends delivered to assistants standing behind. *No chloroform administered.*

I commenced an incision from the junction of the malar with the frontal bone, and carried it downwards in a sweep over the projecting tumour; and, when near the angle of the mouth, and where the cheek was attacked, a greater force was *communicated* to the instrument, and it struck through, dividing in its progress forwards

the labial commissure. Pressure was made by the index finger of the assistant, standing behind, on the labial artery, just as it curved round the inferior maxilla. I then rapidly made an incision from the inner angle of the eye over that portion of the tumour resting on the nose, and, carrying it under the left nostril as far as the septum, cut the upper lip through vertically. I then dissected up this flap from the tumour; and having got all the mucous membrane freely divided from before backwards, and it, together with the flap, raised an inch or so by gentle dissection, the covering was further lifted off the tumour—nothing but a cellular connexion existing and a few fibrous shreds, which gave way before light touches of the knife. In this way the part was exposed up to the inferior orbital ridge and floor of the orbit, no difficulty being experienced in freeing the ulcerated opening. The lower flap was next dissected down from the growth. The zygomatic process of the malar bone was next cut partially through with a fine Luer's saw, and the connexion between the malar and external orbital process of the frontal deeply notched with the same instrument. The section of the bones was next completed, in both positions, with a strong forceps. I next introduced the forceps into the nostril, and cut through the alveolar ridge and palate plate of the maxilla on the left side of the septum; and next, with the forceps, cut through the connexion behind the ascending process of the superior maxillary bone and the frontal. I then cautiously freed the eye from all attachments with the maxillary bone; and this being completed, I seized the tumour and maxilla in a claw forceps, and bent the whole mass down to the mouth; then putting aside the instrument, and protecting the fingers with a towel, I seized the bone and morbid mass, loosened from its bed, and powerfully wrenched it round and round till I broke through and tore up all posterior attachments. Some careful dissection had to be conducted behind and on the outside, where the growth insinuated itself backwards between the upper and lower jaws, and where also it passed external to the jaw, dipping in behind its angle; all, however, was set free, and the mass drawn out. A few ragged shreds had to be clipped off with scissors. The facial artery and a large tributary branch were ligatured, but no other vessel of importance seemed inclined to give blood; and warm sponges were thrust into the part to solicit any temporarily closed vessels to bleed.

During these several steps of the operation brandy was administered copiously, and well swallowed. When the surface was dry,

and not disposed to bleed, I applied the actual cautery very freely to all the deep parts, angles, and fissures, with the object—first, to seal up vessels permanently; secondly, to destroy any germs or roots of disease left behind; thirdly, to avert the accession of unhealthy forms of inflammation; all of which properties, I am convinced from observation, the instrument holds in a charmed way; and when writing on this subject before, my views were expressed as determinedly even as now, my enlarged experience since only confirming their accuracy. There being no bleeding, I proceeded to dress the wound. I placed pieces of sponge, with a strong thread attached, and lint in like manner, into the irregularities beneath the eye and therabouts, which supported it perfectly in its berth; indeed I took the most sedulous care, when freeing the bone and tumour in its vicinity, that this important organ should not be disturbed in its lateral or superior attachments, detaching with the knife every shred beneath, so that any force applied to the tumour and the maxilla should not depress it. The flap was now brought down, and steadied in position by two points of twisted suture in the upper lip; two where the cheek was thick at the angle of the mouth, and a little beyond, and several points of wire suture along the nose and up the cheek; the parts lay admirably in position. Next, to keep out the cheek, I put other pieces of lint, rolled up and guarded with a strong silk thread, behind the cheek, so as to press it out. The threads I brought out (a novel mode) through the ulcerated hole, and fastened them by adhesive straps on the temple and forehead. This was an admirable arrangement to effect this object—the prevention of the flapping in of the otherwise unsupported soft parts.

The patient bore this severe operation wonderfully—and expressed gratitude at its being done; pulse good. She was carried back to the ward, and placed in a bed, comfortably heated and suitable to induce repose. In an hour and a-half after (11½ o'clock, a.m.) very rapid bleeding set in; fortunately I was in the hospital; so rapid was the flow that I feared to try any milder means than at once exposing the part. I drew out the needles, clipped the wire sutures, set free the flap, threw it up, turned out all lint pads, sponge, and clots, and saw a large artery spouting in the very deepest angle, far, far, back. I thrust a pointed cautery, properly heated, into the recess; but its application did not stay the bleeding; for a moment it seemed to have the desired effect, and to do so, but after a few additional seconds again the stream trickled out. Finding a second and a third application equally unsuccessful,

I proceeded, after a few minutes, with the greatest difficulty, to ligature, in this deep hole, the bleeding artery. Shortly after another vessel, close to the last, sprung and gave out blood very freely too. I applied long pledgets of lint, steeped in a solution of perchloride of iron, forced into the part, and a second piece over it and the ligatured artery, and a third piece outside again, and kept up finger pressure for about an hour, when it stopped the bleeding altogether. During all this proceeding the patient was sitting up in the bed, well propped up with a bed-chair and pillows, so that her head, steadied by an attendant, could not recede or elude the force. Relays of pupils kept up this finger pressure, and at several times throughout the day I called to see her; and, lastly, at 10 o'clock at night—and still this assiduous finger pressure, and no return of the bleeding—occasionally warm milk was given to wet the mouth; pulse excellent, and heat well developed over the body; even the flap is well supplied; it is warm—it is swollen and glazed upon the cut margin; as yet it is raised, turned up upon the forehead, so as not to come in the way of, or interfere with, the assistant's hands in making the required pressure.

Nov. 14, 9, a.m.—No return of the bleeding, the pressure being sedulously kept up the entire night. The woman partook freely of wine and milk occasionally. Her pulse this morning was good, 115 in number, regular in beat, and with considerable volume; she slept well, and never did my vigilant assistants relax their best efforts. The flap was warm and well supplied. She took some boiled milk and an egg beaten up, and brandy. At 12 ordered wine freely, the pulse being inclined to flag; got six ounces between that and 3 o'clock. A pint of beef tea, and eight ounces of wine through the remainder of the day and night—directions being left, in case of pulse becoming weaker, to abundantly give stimulants, and beef tea, as much as the patient could be got to swallow; the pressure to be kept up unremittingly by the aid of a number of assistants; she was placed in a more direct sitting posture, and supported steadily.

Nov. 15th.—Had a good night; slept quietly, and took 10 ounces of wine, and abundance of nourishment. Up to this date, 11, a.m., the finger pressure, by relays of assistants, has been kept up (58 hours) and with a successful result. The pulse steady, rather bounding. She is able to speak distinctly, and her eyes are bright and intelligent. On this morning, the danger of hemorrhage appearing to have passed by, I proceeded to replace

and connect the flaps. The index finger of the left hand was passed into the mouth, and the superior flap everted, and its outer edges refreshed with a sharp bistoury; so in like manner the lower flap. The surfaces were then approximated, and a long line of juxta-position, from the angle of the mouth up to the temple, secured by wire suture, and by the twisted suture. The wire sutures were placed at short intervals throughout the upper two-thirds of the wound, while the lower third and fleshy part were supported, as in the first dressing after operation, by the twisted sutures. Though the flaps lay apart for days, yet, when refreshed and held approximated, in a short time they showed indications, by returning heat and pulsative throbbing, of being marvellously vitalized; so much for the efficient arterial supply from sundry sources. The plugs were left within, and undisturbed. During this severe ordeal wine was abundantly given; and, after the cheek hole was closed up, it was astonishing to see how well the creature swallowed. Ordered afterwards as much beef tea and chicken broth as could be taken, and eight ounces of wine in divided quantities. 3, p.m.—Going on most favourably; no restlessness; no distress complained of; sleeps quietly for 15 or 20 minutes, and then awakens for nourishment, either broth or wine. 10, p.m.—Continues to go on favourably; respiration quiet and steady; pulse soft, 100—it has lost its vibrating beat. To continue wine; broth at intervals throughout the night. An attendant to sit beside the bed, with a vigilant nurse.

Nov. 16th.—Had a good deal of sleep; pulse soft, and with considerable beat; respiration good; wound looks very well, admirably in contact; no undue heat; no swelling; no tension; no pain of any marked character. To have six ounces of wine through the day, and two pints of beef tea and chicken broth. 3, p.m.—Going on most favourably; no accession of pain or fever; she has slept quietly, and taken nourishment freely; anointed the wounds with oil, to soften the crusts of coagulated blood, &c. 10, p.m.—Calm in temper; circulation not excited; to have eight ounces of wine for the night, and beef tea and chicken broth as much as can be taken.

Nov. 17th, 9, a.m.—Slept quietly, awaking at intervals only, to take nourishment. Pulse 100, steady and soft. Speaks with strength, and her voice quite clear and natural. She took throughout the night the full quantity of wine, eight ounces, and two pints of beef tea. Changed into another bed so as to refresh her. The plugs remain still undisturbed in the chasm. Wine and broth to

be continued freely through the day. She is sustained in the sitting posture by the support of pillows and straps; calmly and quietly, thus securely steadied. 9, p.m.—Has taken the entire of the nourishment throughout the day most freely, and feels much the better for its sustenance.

Nov. 18th.—Continuing steadily to improve; plugs not interfered with; wound nearly united throughout. Wine and broth as on yesterday.

Nov. 22nd.—Removed the needles and cut out all the wire sutures. Union perfect and firm from one end to the other. On examining plugs found them still adherent, therefore let them remain. 10 ounces of wine.

Nov. 24th.—Plugs now loosened by free suppuration, so took them away; no bleeding after. Supported the entire cheek with long broad adhesive straps. On making traction on the ligature securing the internal maxillary artery, it came away without any trace of blood.

Jan. 20th.—The patient continued steadily to improve, taking abundant nourishment, both in the way of food and stimulants. The cheek is long since healed up, and the internal parts covered in with healthy repair. She is now up, and walking about; and it is astonishing how rapidly both strength and energy have returned. Four days later she left the hospital free from all annoyance and suffering; and it was most striking the little amount of disfiguration that followed upon so extensive and severe an operation.

To recapitulate the points of interest in this case:—1st. The magnitude of the operation; the intricacy of the dissection. 2nd. The cauterization of all the deep parts within, and from which the tumour was evulsed. 3rd. The ligaturing of the internal maxillary artery, and the application of digital compression 58 hours, for intermediary hemorrhage. 4th. The casting aside of the flaps from each other, and keeping them apart for two days and a-half; the refreshing of their edges, and their subsequent adhesion. 5th. The little amount of deformity after so violent and formidable an operation.

The rapid and alarming bleeding which occurred in this case suggests the propriety of my still further dwelling upon so hazardous a casualty. And, as I know no better monitor than stern experience, I shall detail another case where I had to remove the entire upper jaw for an osteo-sarcomatous tumour, and also to ligature the internal maxillary artery. From the violent rushes of

blood in those instances, and from other operations, and even dissections which I have made, it may be received as certain, that the artery does not always break up into the trivial little set of branches in which it is described to terminate:—

CASE IV.—*Successful Excision of the Entire Upper Jaw and Palate Bone, for a Very Large Osteo-Sarcomatous Tumour; Ligature of the Internal Maxillary Artery; Rapid Recovery, with scarcely a Trace of Deformity.*

Catherine Wade, aged 50, admitted to Mercer's Hospital, March, 1862, with a large osteo-sarcomatous tumour of the upper jaw. She stated that, 16 months before, very acute pain attacked "a lump which was in her jaw for a year and a-half." She perceived, about this time, a great change in the size of the tumour, which steadily increased. She lost two of her teeth, which became gradually loose, having suffered great pain for days in them, and shooting through the tumour; thus the growth progressed to the above date, when she came up from the country to me for operation. The following was her condition:—A large tumour, the size of a small orange, with prominence of the left maxillary bone, thrusting out the cheek, partially shutting up the eye, intruding on the nose, depressing the palate plate, forcing down the alveolar range, and making the mouth droop. The integuments were strained, tightened over the projection, yet but little discoloured. On lifting up the lip and drawing outwards the cheek the internal relations of the growth were fully revealed; the whole alveolar range was included, from the first incisor on the left side, to far behind the last molar, by the adventitious growth. The tumour extensively involved all the anterior wall of the antrum, it being thrust out, as it were with violence, by the growth within. So extensive was the force acting within the maxillary cavity that its floor, the hard palate plate, was depressed and forced down to fully an inch below its natural level. The whole surface of the tumour was irregular and uneven, save where it passed back upon the palate plate of the palate bone and soft palate. The tumour throughout its alveolar border was hard and resisting, while posteriorly and above it was elastic and crackling; on pressure it was painful throughout, partially so beneath the orbit, and even here there was a marked sensitiveness complained of. When handled from without, corresponding to this point, an additional elevation could be detected;

and immediately beneath the orbital ridge the floor of the orbit was encroached upon, thrown up, particularly along its anterior dense edge, and likewise the lid forced upwards with it, which, together with the upward development of the tumour, passed higher than the visual axis; the head resting horizontal. At this stage of the morbid growth all the teeth remaining, three in number, were quite loose, and blood flowed down freely from their sockets; they lay almost entirely concealed, buried in the abnormally-developed parts around. The colouration of the tumour was varied; of a deep purple reddish colour in its most prominent and elastic parts, and of a brighter red in its firmer and more dense constituents. During the incubation and development of this tumour, in its early stages, pain of a very severe nature characterized its changes—when projecting and prominent, pain was only sometimes present—often absent for days; in its latter state, now, pain not very severe.

On a careful examination of the tumour I determined on removing the entire upper jaw and palate bone; and on the morning of the 12th of March, 1862, did so according to the following method:—The woman was made to sit in a strong arm chair, and secured after the manner which I have already laid down, and with her head resting against the breast of an assistant. Standing in front of her, I passed a sheathed bistoury along the middle of the cheek, and having got its point as high up as possible I withdrew the sheath and transfixed the cheek, from within, close to the junction of the malar and maxillary bones, and cut it down to the angle of the mouth. I at once ligatured the facial artery in the lower flap, and then prolonged, with a scalpel over the malar bone, the incision of the soft parts; and next freed the cheek from the tumour up to the edge of the orbit, all the way from without inwards, and then divided the upper lip, in the mesial line, into the nostril, and likewise lifted it up, together with the ala of the nose, from its attachment to the maxillary bone. The soft parts were most freely stripped up, and the bone, with its morbid production, throughout its entire extent brought into view. With a fine Luer's saw I notched deeply the junction between the malar and superior maxillary bones, and then, with a strong forceps, completed their separation. One blade of the forceps was next passed into the left nostril, and the other into the mouth; with one stroke of the instrument the hard and soft palates were cleft throughout. I next clipped across the ascending nasal process of the superior maxilla, close to its junction with the frontal,

and then seized the tumour in the grip of a large claw-forceps and pressed it down. The part gradually yielded with a few touches of the blade of a scalpel; the eye and the parts upon which it rested were let free from the orbital plate, and then the bone and tumour forced down into the mouth. The entire mass was then twisted upon itself so as to lacerate, if possible, the supplying vessels from behind. Some adherent shreds required liberation by the knife; and then all was most satisfactorily taken away. The eye was not in the least disturbed from its position, and the cavity from which the tumour and jaw were taken, though startling to look upon, yet was most healthy throughout. Some brandy was administered, and time given for the patient to rest; in a few minutes a very large artery burst out furiously—blood rapidly flowed from the mouth. At once search was made—and, on pressing back into the deepest angle of the mouth, I could discern a large vessel copiously ejecting blood. This, from its position, was the trunk of the internal maxillary artery; with a very curved tenaculum, stout in its point, I seized the vessel, having failed with spring forceps and toothed forceps to do so; and now throwing a noosed silk ligature over the handle of the tenaculum, I caught it in a long forceps and passed it along to the extremity of the instrument, where it held the artery, and with the forceps lifted the noose over the sharp point of the instrument. Thus the artery had a cast of the silken ligature fairly round it; the difficulty which now offered was to efficiently squeeze the knot, so as to divide the internal coats of the vessel, and permanently secure it; however, by rapidly following in the instrument with the index fingers of my right and left hands, the ends of the ligature being held tense over each, the tie upon the vessel was well secured; the second knot was as readily, and more easily, accomplished; the tenaculum was then cautiously withdrawn, and the ligature brought out through the wound and guarded on the cheek; the surrounding parts were all seared with the hot iron as a prevention against unhealthy inflammation being set up, or languid inflammation, almost as subversive of quick vitalizing repair; pieces of sponge and pieces of lint, with ligatures of reserve, were pressed into the deepest parts, the ligatures being brought out through the superior angle of the wound at the malar bone, and fastened with adhesive plaster on the temple. I next brought the vertical incision in the lip together with two hare-lip needles, and the longitudinal wound in the cheek accurately in contact by eight points of the silver wire suture. When all this dressing was accomplished, it

was truly astonishing how little deformity remained. The patient was then conveyed to bed—having partaken freely of a long draught of warm beef tea, and after it some wine, and taken 30 drops of Battley.

9 p.m.—Has had a quiet day and a good deal of sleep after; I found her, at this hour, free from pain and cheerful; 20 drops of Battley.

13th.—She has had an excellent night; reaction sufficient; not too much; no developed fever; pulse quiet; no pain; wine, six ounces, with cold water; cold beef tea.

14th.—Has had an admirable night; no pain; slept quietly; pulse only 86; has taken nourishment very freely. The wound looks most favourable; to have four ounces of wine by day, the same at night, and beef tea three times in the 24 hours.

18th.—Progressing most favourably in every respect. I removed, to-day, the pieces of sponge and lint, having first gently injected a stream of tepid water around them, and by such proceeding loosened their adherence, and permitted readily their being taken away without any renewal of bleeding.

20th.—Removed the needles from the lip, they lay there so long quietly, there being no strain upon them. So accurate was the line of union that it could scarcely be perceived; cut out all the silver sutures likewise, except two near the angle of the mouth, which I suffered to remain to support the more massive flaps; the interior of the mouth looks admirably.

26th.—Removed the remaining stitches. On the 26th it would be impossible, at a little distance, to know that any operation had been performed; and the eye has regained its motions, and the lids their power of adaptation to sleep or watchfulness. The patient is now out of bed, and walking about the ward.

The recovery of this woman was most remarkably rapid; in three weeks she was perfectly well; there was scarcely a trace of deformity externally. Where the knife had traversed through the cheek its course was traced not thicker than a thread, and where the lip was vertically severed it was difficult to discover; again, the eye was restored to its normal position, it lay on a plain horizontal with the other; its functions were recovered, as now its axis was correct. The retina had never been infringed upon by structural change. So now, all obstacles being removed, the transmitted impressions were at once appreciated and sight restored. At no distant period it is my purpose to detail several cases of excisions of portions of the

upper and lower jaws for cystic and benign tumours, without cutting the cheek at all, in some of which I have sawed large portions of the alveolar range, cutting away all beneath; in others removing the external wall of the bone pressed out and deformed, and gouging away the lining membrane and all within. Again, portions of the alveolar range, by vertical incisions through a part of the depth of the bone, one before, the other behind the part implicated in disease, and connecting both by a horizontal section with a fine saw—or what is better, a bent or curved-bladed forceps; thus, when exemplified in the lower jaw, leaving its under compact part in security, and so preserving the perfect outline of the lower part of the face. However, as I have just said, I trust, at no distant period, to be more explicit in this most interesting part of surgery.

CASE V.—*A most Unusual and Hideous Form of Double Hare-lip, Complicated with Double-fissured Palate; Enormously Developed Septum, and Intermaxillary Projection, all Fused into a Shapeless Mass; Operation; Recovery, with scarcely any Deformity.*

In the pages of this Journal will be found two papers of mine on the operative measures necessary in the treatment of hare-lip—the first published in February, 1856, the second in May, 1860. In each of these communications numerous cases of the most complicated forms have been described and figured, in which I had most successfully operated. These shocking instances of deformity were selected from amongst many, owing to the difficulties which surrounded them in reference to operation. Since the above period I have operated upon many, many cases, both in private and hospital practice, bearing a close resemblance to them, and with an equally satisfactory issue. To cases such as these I shall not again refer, though I could extend the catalogue of them in a most remarkable way—all, however, confirming the accuracy and practical value of every deduction I arrived at, and every precept which I laid down. The following case, however, from the magnitude of its deformity, is well entitled to ardent consideration, as affording a fine example of what may be accomplished, even under the most unpromising circumstances:—

James Ferguson, aged two years and seven months, admitted to Mercer's Hospital, January, 1863, with terrible deformity of the mouth. The mother was rather handsome, without the least trace

of irregularity in the symmetry of the face—without the least deviation from normal arrangement in the alveolar arch or expanse of the palatine dome, or irregularity even in the setting of the teeth. So, likewise, the father has been reported well-looking, and free from deformity of any kind. Neither of the parents had any one immediately connected with them, that they could remember, marked in this way. The little patient was the third child; the other two were handsome and well formed. The mother did not remember being frightened, or cannot account for any mental impression producing terror. Words can but feebly describe the revolting aspect of the child; but I shall endeavour, with all accuracy, to describe the departures from a normal condition to the extravagant malformation exemplified in this stricken creature.

The maxillary bones, on either side, were scarcely at all developed in front, and the anterior margin of each was, as it were, suddenly pinched inwards; small angular little teeth studded these rounded and retiring portions. The palate plates were scarcely even marked; a thin semilunar rim of bone projected slightly inwards from the ill-formed alveolar range, like a narrow little shelf; and this, on either side, constituted the only attempt at separation between the cavity of the mouth and that of the nose. As the superior maxillæ were separated in front by fully three-quarters of an inch, so, likewise, the imperfectly developed palate plates, in their semicircular sweep outwards, left fully the same extent of space between their inner or concave margin and the inferior firm edge of the pendulous vomer. Thus, then, there was this widespread double fissure of the hard palate, and an absence altogether of the palate plates of the palate bones. So, too, the soft palate was never formed; there were no little pendulous flaps of it drooping on either side, as so frequently observed in ordinary cases of double hare-lip and fissured palate. The altogether unnatural construction of the vomer, as we shall presently see, created another remarkable feature in the double cleft of the palate, for this bone, so smooth, so even, so thin and extensive in its normal condition—playing so important a part in the partitioning of the several cavities hereabouts, and, by its steady support, imparting symmetry and beauty to the nose—had another attitude and aspect stamped upon it by the vicious development imparted to its growth. The bone did not descend so vertically behind as it ought to have done; it was cut off, as it were, from above, downwards and forwards. This absence of its posterior part permitted the sulci, formed

between it and the deficient palate plate, on either side in front, to communicate behind, and form an extensive chasm, revealing the entire pharynx to its highest cranial attachment. Again, in bulk and volume, the bone was so materially changed, as almost to obliterate its characteristics altogether. Throughout, from its highest margin, where it was inordinately thickened, it gradually increased in bulk and descended (its line of descent was about correct, probably a few lines lower than it ought to be); but the lower edge of the bone had gradually attained more than a quarter of an inch in thickness—this, at least, at its most posterior part; and still more gradually forwards, truncated all along until implanted into the inordinately developed intermaxillary bones. And now I shall speak of the hypertrophied mass composing the central osseous projection. I have met with, described, and written about many rare, curious, and remarkable configurations—freaks of nature—exemplified in the evil proportions of this central prominent bony piece; but I have never seen, in any instance, so wide, so deep, so prominent a piece; so dense and firm in its structure, so unyielding, fixed, and rigid in its position. The lower end of the vomer was expanded, osseous material, inordinately superadded—dense throughout, contributing materially to the width and depth of the intermaxillary bones, all now fused together—the entire projecting piece standing almost straight forward, far beyond the tip of the nose. An idea of its size may be more readily realized by its measurement: it was nearly an inch across; three-quarters of an inch in thickness or in depth; and in length, from where the vomer began to decidedly contribute in its formation, fully an inch. A part of this mass was composed of partially hypertrophied gum, dense and unyielding as cartilage; small teeth, in earlier days, had been in it, but now had been shed. The mucous membrane covering it was highly vascular, while that covering the vomer was of a brilliant scarlet colour, tinged with blood, traversed everywhere with minute arterial vascularity—ramiform injection of vessels, so minute as to be only revealed by the aid of a lens, yet so abundantly crowded, massed, when taken as a whole, giving the appearance of a continuous vermilion colouration of the entire surface. Attributable to the extensive open cavity in front, admitting, according to greater or less exposure, the cold or damp air, is the highly vascular condition of the mucous membrane, which also prevails throughout the entire nose, palatine regions and fauces.



Fig. 1



Fig. 2







I pass along now to the description of the soft parts conjoint with this condition of the bones which I have endeavoured to describe (See Plate IV. and V., Fig. 1, front and side views of the patient), and which, from their unparalleled irregularity, contributed materially in adding to and likewise revealing the hideous aspect of the child. The alæ of the nose were widely expanded, dragged outwards, fastened tightly, tensely, down to the turned in anterior margins of the maxillary bones, while the tip of the organ was everted, dragged upwards and forwards, matted into the fibrous structure of the protruded osseous mass in front. The great elevation of this part gave the appearance as if the nose was broken across in the centre; pendent from the very tip of the nose, and standing still more prominently forward, was a rounded piece of integument not larger than a sixpenny piece, and likewise adherent to the upper surface of the projecting osseous part; it was thin in its construction, and margined with mucous membrane. The alæ of the nose, as I have mentioned, from their connexions, were dragged so directly outwards as to bridge over by a straight line the dark sulci that intervened between the insertion of the vomer into the protruded central solid mass and the non-developed anterior edge of the maxillary bone on either side. From the depressed point of bone to which the ala was attached, so likewise here was the corresponding half of the malformed lip tied tightly down. The right and left portions seemed to correspond in form, in curtailed volume. Each portion, from its constriction above, where its material was very different, suddenly became protuberant, everted, and sharply receded, passing almost vertically to meet the lower lip, and at their junction completing nearly a right angle, instead of lying in juxta-position. From this it will be seen how small the lateral portions were, or, in other words, how withered in their development. When this creature made the effort to swallow, the greater portion of both solids and fluids were projected by the tongue through the cleft in front, owing to its unusual and over-demanded exertion to collect and force back the nutriment. I have before noticed and directed attention to the fact of the unusual development of the organs in cases of somewhat an analogous amount of deformity, tending greatly to the difficulties of the early management of the case after operation, owing to the confined limits imposed upon its volume and its movements. The condition of the child was altogether most hideous and pitiable (See Plate IV. and V., Fig. 1.) On Saturday, January 31st, I operated upon the child

according to the following description:—I need scarcely say it required much thought and consideration to plan the various steps of so complicated a piece of business; and I may here add, as a word of caution and admonition, this rule, which I would thus write, to enforce careful thoughtfulness for every emergency:—*He who first operates has the entire of the deformed parts in their fullest development, such as they have been created—soft parts, corrugated and diminished in proportions; yet they are elastic, extensible, and permit of separation, of traction, to a vast extent. In this early state, by free and extensive dissection, abundant material can be borrowed from the cheeks and sides of the face to cover in the faulty gap in front, while the irregularly developed maxillæ the protruding inter-maxillary bones, the abnormal septum, may all be pared down, split up, thinned; portions removed; spaces cut out, defined in form, for the reception of distorted, thrust-out parts; to be held in unity by wire sutures, by needles, until steadied together by a new and living bond, permanent for ever.*

Should these early efforts of the operation fail, attempts made after seldom prove so satisfactory, and for these simple reasons:—Much has been taken away, the soft parts that remain which refused the union; from the cutting, from the piercing, from the nonextensibility consequent upon the reparative process, efficient to heal, is very imperfectly conditioned to endure an increased amount of traction, that which must be enforced, so as to bring surface to surface, and offer even the chance of union.

These secondary operations, as I have well determined from repeated examples, require more skill, more tact, more delicacy, at the same time boldness of manipulation, to accomplish all that is demanded and required, than any primary case can possibly do. Hence the deep stress which I lay upon the responsibilities which devolve upon the surgeon who first undertakes to meddle with and endeavours to rectify those bad cases of hideous deformity consequent on arrest of development. I shall now proceed to detail the operative proceedings, which, after due reflection, I considered most applicable in this frightful case. On the morning of the operation the child had been abundantly fed on two occasions, so as to do away with the necessity of giving food for some hours. The little fellow was rolled in a sheet, not too tightly, merely so as to retain the arms, but not in the least to interfere with the ingress and egress of air to and from the chest in lusty crying; thus he was placed in the nurses arms, who sat upon a strong chair, with his

head resting upon her left shoulder, the chair being elevated to a convenient height. I commenced in this way:—I first struck a tenaculum into the central fleshy part, lifting it upwards, and making it tense at the same time; then sweeping the knife rapidly beneath, dissected it up to its attachment from the tip of the nose. I guardedly preserved every atom of it by semilunar strokes of the knife, by which method the curved and matted-down borders were not infringed upon, whilst the osseous projection was fairly exposed. The tenaculum was then disengaged from this soft portion, and it was not meddled with further in this stage of the dissection. I next proceeded to deal with the projecting osseous piece. All its features, and characters, and intimacy with the vomer being thoughtfully considered, duly weighed; the soft tegumentary piece being guardedly drawn up by an assistant, I cut, with a small-bladed, sharp bone forceps (constructed, by order, for me, and most efficient for such purposes), the vomer, where quickly expanding for fusion into this morbid development, almost directly backwards, there being but very slight inclination upwards, to the depth of about three-quarters of an inch; the blades of the forceps were then placed on either side of the projecting piece, and a thick slice removed from its anterior surface, the two incisions meeting above at nearly a right angle; thus a very large portion was taken away. Though this proceeding was more rapidly executed than the time taken for its description, the bleeding was most alarming. A very large vessel, nearly the size of the radial artery, nourished this unnatural development; and when it was divided the blood shot out vigorously in a rapid current. However I had anticipated, from antecedent cases, the likelihood of such an occurrence, and was prepared for it with the actual cautery. A fine-pointed instrument, heated to its full temperature, was resting in the furnace; quickly it was thrust into the divided bone after the retracted artery, and efficiently it fulfilled its duty on a second repetition. Hemorrhage stayed, I proceeded still further to prepare this piece to fill up the space between the imperfectly developed maxillary bones, and so to afford an even support to the upper lip when restored. The forceps was next applied behind the projecting piece, and made, by two incisions, to cut a triangular piece out of the vomer, the apex above, the base inferiorly. My own forceps for dividing the stalk (figured in the *Dublin Quarterly Journal*, May, 1860) was next laid on, and the compact osseous bar clipped, while the less dense and soft parts on either side of the stalk were spared, the vascular supply

descending to the piece, essential to be preserved, not interfered with, and thus its life secured.

The various cuttings just detailed rendered this piece most amenable to management—the taking away of the large portion in front, removed for ever what was obnoxious there, the peculiar angle cut out behind, and the clipping of the dense stalk in the centre, nearly through its entire depth—allowed the preserved piece to be forced back, most gently, without risk of its vital supply; and when the lateral borders of it were pared, and the marginal gum on the maxillary bones refreshed, it was astonishing how well this extensively pared dense piece rested in the recess. So accurately were all these details carried out, effected, there was no tendency or disposition of the piece to start forward; and, from the evenness of the cuttings, there were no sharp edges or irregularities anywhere. The solid parts being constructed, I again returned to the central soft piece, and seized it with a tenaculum, at its point, and cut it with straight scissors into a perfect V shape, preserving it to its very lowest point. The left portion of the lip was then seized with the tenaculum, just external to its curve, and lifted upwards and outwards, while the scalpel was carried beneath it, cutting extensively, widely, the mucous membrane, and freeing fully the expanded and pinned-down ala. This being all set free, liberated, the knife was still carried outwards, detaching the cheek, and thus creating that sufficient laxity—whereby an approximation of the parts might be secured—that more constrained relaxation favourable to union; the right portion of the lip and corresponding ala of the nose and cheek, were treated after a similar manner. Such being efficiently done, the curved scissors, preferred by me in such cases, was applied, first upon the left side, being laid on at the red border, just external to the point where the tenaculum was inserted; this portion of the lip being stretched and made steady, on the instrument being quickly, energetically closed, the separation of the rounded border was accomplished to its highest part into the nostril, at its point of attachment with the ala. The right portion of the lip was treated in every particular in a similar way. During these steps of the operation scarcely a drop of blood was lost, so carefully was pressure made on both facial arteries. Next came the important stage of the operation—the arrangement of all the cut parts, and the adaptation of all the divided surfaces. The needles which I used for this adjustment were such as I have figured and approved of in my essays on the operative measures necessary in the

treatment of hare-lip—the long, slender, steel needle. The first of these was passed from left to right, its entrance the fourth of an inch external to, and above the left ala; being thrust towards the right, it was made to transfix, a little above the apex, the triangular piece formed out for the septum of the nose; and being still further pressed on, the needle made its appearance at the same distance from the right ala, and at the same height from its under margin, as where it entered on the left side; thus, when the transfixion of the several parts was accomplished, the needle lay on a perfectly horizontal plane. It must be remembered here that the points of entrance and exit of the needle were so planned at such a height above the low margins of the alæ, that when it traversed the central triangular piece, it held it well up to the cut surface of the vomer in front, so as to establish a permanent union. By direction, then, the cheeks were well forced forwards, and I threw a thick silken waxed ligature across the needle, in the figure of eight form. From the decision with which I had the cheeks held forward the parts glided gently together towards the centre of the needle, to which parts they were compressed, and the ligature was made steadily to follow them, *not to drag them together*, but simply to prevent their retraction and separation—their again receding. The cord was thrown several times from side to side, so as to perfect the twisted suture. It was very apparent now how admirably the septum had been formed. The second needle was next introduced, fully three-quarters of an inch away from the edge of the cut surface, and made to enter at the junction of the red border of the lip and integument on the left side; with a steady pressure it was forced from left to right, deep through the lip, cautiously in a horizontal line, so as to strike the right or opposite half, critically in the same position, so as to make its appearance at the same distance from the red border, and guard against any unevenness or notch below. A strong waxed silk ligature was also thrown, in the figure of eight form, round this needle, the same precautions as taken with the first needle being adopted, of forcing forwards the soft parts to absolute contact, before the cord was cast around; several turns of it were made in the evenest way, and the adjustment could not be more perfect. Owing to the elliptical incisions created by the curved scissors, and the remote ends of the double clipsis being brought together, a slight oval space intervened between the upper and lower needles; in the upper part of this the apex of the central fleshy piece forming the septum

lay. I introduced a third needle, finer than the other two, midway between both, on a line with the other two, at the point of entrance and exit and depth throughout from the surface. A separate ligature was likewise thrown around it, in the figure of eight form, and the same pressure from behind forwards afforded to the soft parts, as in their application. When the ligature was applied the concave margins entirely disappeared; surface lay to surface in a vertical line, and, as a consequence, the inferior margin of the lip was rendered slightly prominent, the object aimed at by such a division and adaptation of curves. The ends of the needles were next clipped off with an ordinary wire nippers; thus the needles were inserted, thus the ligatures were applied, each needle having its separate cord. That reprehensible practice of passing the ligature from one needle to the next, and so on, I need scarcely say was not employed by me. It is a proceeding which warrants my deepest censure. Such a mode of application tends to approximate the needles, and so, in proportion to the tension employed, to shorten the cicatrix, or, in other words, to contract it in its vertical axis and increase the predisposition to notching at the red border; whereas the separate ligature thrown around each needle, flatly and evenly laid on, tends to press gently down the lip, and lengthen—increase its vertical measurement, and likewise to assist the evenly-adjusted curvilinear incisions in perfecting the union, and rendering prominent the inferior part of the wound and red border of the lip. During all this manipulation the cheeks were pressed steadily forwards, so as effectually to guard against any sudden jerk or additional violence, upon the constrained parts. Long since, in those cases, I have put aside the use of spring apparatus, from the difficulties I encountered in their steady application and adjustment to the heads of infants—owing to the facility with which they were put astray, and to their likelihood to do mischief; again, from the readiness with which they went out of order, and so lost their charm. The method which I have been adopting latterly, and which I find perfectly efficient in taking the place of the assistant's hands, in holding the parts forward, relaxing the cheeks, and grip upon the needles, is the application of adhesive straps, cut, figured, and applied after this manner:—Two pieces should be cut about an inch and a-half wide, and each long enough to reach from the summit of the forehead to beneath the chin, taking a semicircular course behind the cheek. The edge of the strap, which is to be anterior when applied, should be cut in a semicircular shape to the

extent of the cheek, the centre or deepest portion being somewhat more than half-an-inch. One end of the strap should be fastened on the upper and fore part of the forehead, then brought in a curved manner outside or behind the cheek, and then carried, with moderate traction, forwards beneath the chin. The second strap should be applied, after a similar fashion, on the opposite side. If the plaster be good and adhesive it never slips, the broad ends take a firm unyielding grip, and the straight edge of the plaster behind, made tense by the traction forwards, offers a direct opposition to the recession of the cheek, while the curved anterior margin permits the strap thus put on to lie more evenly, and so accommodate itself to the prominence of the cheek thus forced forwards. In the case under consideration, and in which the strain upon the adjusted parts was extreme, this practice fulfilled every indication that the most perfect appliance could bestow. The operation and dressing being now finished, I was well satisfied with the appearance of the child. Not a drop of blood oozed from the parts, and he was well resuscitated by a few tea-spoonfuls of wine and water.

9, p.m.—The child was wonderfully well; he had taken milk freely several times. In five hours after the operation, the child being quite clear from the effect of the chloroform, and having perfectly recovered from the shock, as evidenced by reaction, I had, as my usual custom, small doses of laudanum, at intervals of three or four hours, administered, so as partially to narcotize the child. Previous to each additional dose the infant was freely fed, and quickly calmed again to repose. On the morning following the operation, February the 1st, nothing could be more satisfactory than the condition of the little patient; he had calm, quiet, steady respiration, an excellent pulse, well arterialized blood; he had consumed a large quantity of milk; pain was averted, and undisturbed sleep was enjoyed, from the sedative influence of the narcotic. Here, again, I would wish to urge the propriety of administering opium to children after painful and serious operations. *Children bear opium in proportion to their years, I would say, even better than adults.*

I fear this axiom will startle some; but, as all other propositions in these reports, I offer it, too, with all truthfulness as the result of my own experience. In my *Memoirs on Hare-lip* the same mode of procedure has been inculcated—advocated; and in numbers of cases occurring in my practice, since the last was published, its superiority has been confirmed; and so likewise after the

embarrassing operation that I am describing. Everything went on most admirably, until the evening of the third day, when erysipelas attacked the parts. The child was listless for some hours before, and refused his food; soon the blush of inflammation showed itself about the wound, external to the needles; the nose was swelled; the eyes were puffed. At once a brisk mercurial aperient was given; wine, with water, was occasionally taken. On the following morning (February 4th), and the fourth day after operation, the erysipelas had made considerable progress; the child had scarcely any sleep; he was tossing and restless all the night; the lip and cheeks were more swollen, more brilliant in colour; the eyes were more shut up; the forehead was involved slightly—œdematous, painful to the touch, and discoloured; pulse small, feeble. All the swollen parts and parts engaged were now smeared with the strong mercurial ointment—a drachm being applied morning, mid-day, and at night; and sherry wine was ordered in what may be considered large doses for an infant at this tender age; four ounces were consumed in the 12 hours; this treatment was continued steadily—perseveringly, for two days (February 6th), before the inflammation began to subside. Then the application of the mercurial ointment was suspended, and all on, removed with sponge and warm water. Still the wine was continued, and strong chicken broth, which the child partook most freely of, as well as of milk in abundance.

February 7th.—A remarkable diminution in the swelling; all redness dispersed: the eyes bright and intelligent, and the œdema of the lids gone; yet the skin branny—scaly everywhere, upon the recent track where this erysipelatous inflammation travelled; fortunately no depots followed; the suppurative crisis had been arrested everywhere; the child took now his food with eager anxiety, and the peevish restlessness of the creature was altogether subdued. Now came the question as to the removal of the needles. In my opinion their presence was not the exciting cause of the erysipelas at all. I attributed its origin to the necessary violence inflicted on the deeper parts; from the admirable way in which the cheeks were relaxed there was but little strain upon the needles; and, from their fine slender proportions, they were sources of but little irritation or annoyance to the parts, which they so delicately held together. In my former writings I have laid down the most suitable time for the removal of the needles at 96 hours after the operation, and invariably got perfect union by such a mode of practice. In the instance I am now relating, I did not take them away until the seventh

morning after the operation (168 hours). As I have just mentioned, the parts were so relaxed, so free altogether from restraint or tension, it was clear the needles were doing no harm there, and there was no chance of their cutting their way out and occasioning unsightly gashes; nay, I looked upon their presence, as lying in this most favourable aspect, as a great advantage and protection in support, in case the unhealthy inflammation had interrupted the adhesive bond or union of the divided surfaces, or occasioned—brought about their separation afterwards. Now, however, that all unhealthy inflammation had long since departed, I removed the needles with the greatest caution, an assistant all the time steadying the head and maintaining the cheeks well pressed forwards. On the parts being revealed, it was a pleasing thing to see union effected throughout; the septal piece was perfect, adherent to the bone; the angle of it was evenly caught between the lateral portions of the lip above, and united beautifully there; while the remaining portion of the lip was perfectly formed, and united to the lowest point of its red border; while not the least remarkable part of the change wrought in the features of this little creature was the perfectly raised and symmetrical form and position of the nose. Adhesive straps, broad at their ends, narrowed toward the centre, were applied, so as to sustain the parts and maintain forwards, with steady support, the cheeks; while the lateral straps from the forehead round the cheeks to beneath the chin were applied in the manner already described. Such was the mode of dressing employed for about 10 days, without a single untoward circumstance to arrest the progress to perfect recovery. At the end of this time it was most marvellous to see the changed aspect of the child. At a little distance it was almost impossible to discover that the little fellow had been subjected to operation at all; and on closer scrutiny the adaptation of parts was so accurate, and the union so perfected throughout, that only faintly marked lines of junction testified to all that had been done. On examining the mouth, nothing could be better than the way in which the partially preserved central piece lay; it shut up all the hideous gap between the maxillæ, and its lateral edges lay in contact with, and united immovably to each, whilst its lower edge ranged with the alveolar arch and perfected the palate in front, at the same time that its anterior surface sustained the united lip in its now full integrity and proportion. The condition of the child, before and after operation, is most accurately represented in plates No. III. and IV., Figs. 1 and 2, from drawings

beautifully executed by Mr. Thomson. From first to last the history of this case is interesting in the extreme; presenting difficulties and complications of unusual magnitude, yet successfully overcome by thoughtful consideration, gentleness, promptitude, and decision. In the after treatment of this child there is one point that I must again lay stress upon. I say, again; because in my essays on this operation the value of the practice did not escape me. I dwelt upon, and illustrated by cases, the great efficacy of the administration of opium so as partially to narcotize the child. To the exhibition of the drug—the extension of the practice in this most embarrassing case—may be, I think, in a great measure, attributed the successful issue of the operation.

I contend for, and am satisfied, that the parts were all evenly cut—most accurately adjusted; gently, lightly, steadily in contact; yet it was essential, for security of union, that no irritation should be set up—no dragging or tension on the needles; in other words, that the child should be calmed down, no restlessness, no crying, no struggles. This was all brought about, all done, by the exhibition of opium. And as the shedding of the lymph, its plastic exudation, its organization, was not interfered with or interrupted, union, healthy junction, followed in a few hours, and was perfected previous to the terrible complication, erysipelas, setting in. Reasoning from analogy, it may be inferred, had not healthy adhesion, even union, been quickly effected, the supervention of this destructive inflammation would have marred all prospects of success, and caused the operation to be a perfect failure. Whereas, now the case stands prominently forward as a good example of what can be effected by operative surgery in removing distress and rectifying hideous deformity.

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ART. IX.—*Cases of Cancer of Heart, Lungs, &c., with Incidental Remarks.* By ROBERT LAW, M.D., Professor of Institutes of Medicine in School of Physic in Ireland, &c.

HUGH DARLING, aged 50, gate porter, residing about four miles from Dublin, beyond the Phœnix Park, was admitted into Sir Patrick Dun's Hospital, December 11th, 1861. At the time of his admission into hospital he appeared to be very ill, and in a state of extreme prostration and weakness. He complained of oppression of his chest and of distressing palpitation of the heart; he had

a sallow complexion, and his expression indicated considerable suffering; he was very much emaciated; the pulse, 130 in the minute, was small and weak. On examination the chest exhibited the following phenomena:—Anteriorly the right side was clear on percussion, and the respiration was very distinct—almost puerile; the left side was extremely dull from the clavicle to the mamma; from this down it yielded a tympanitic clearness; corresponding to the dull sound there was complete absence of vesicular respiration; a distinct bronchial murmur alone was heard. The heart was heard pulsating in its normal position. The clear tympanitic sound immediately below the mamma, was, no doubt, yielded by the stomach. Posteriorly the stethoscopic phenomena were the same as those anteriorly; the sound on the right was clear, and respiration distinct; while on the left the sound was dull and the respiration absent, with the exception of the ringing bronchial murmur that was more distinctly heard than before. The same tympanitic clearness that existed unusually high before, was equally high behind. There was no bronchophony nor ægophony, nor was there any apparent dilatation of the side.

The patient's weakness and exhaustion were so great that I felt I should not have been justified in asking him to assume the prone position, on his hands and knees, with the view to see how this would affect the stethoscopic phenomena. There was but little cough, and very scanty mucous expectoration.

The previous history of the case was, that he had been in bad health for six months, complaining chiefly of pain in the left side; but it was only within the last three months that he had become seriously ill, always referring his pain and distress to the left side. He had been under medical treatment, and had blisters and various applications to the side, or rather to the back, but without any lasting relief. Six weeks before he came into Sir Patrick Dun's Hospital he was seized with hemoptysis, for which he was in Stevens' Hospital. When the hemoptysis had quite ceased, he returned home, when a sudden aggravation of his sufferings came on, which brought him under our care.

The question now arose, what was the exact nature of the case, or what was the explanation of the stethoscopic phenomena? To what cause, or to what conditions of the parts, were we to ascribe the dulness of percussion and the absence of respiration to such an extent on the left side? We confess we saw a good deal of difficulty in the diagnosis, and three views suggested themselves to us

for our consideration. Before we proceed to canvass these different views we shall advert to the unusual height to which the stomach ascended, as indicated by the clear sound, both anteriorly and posteriorly. It first occurred to us to inquire if it could be a case of effusion into the cavity of the pleura. If this were the case, we should have had dilatation of the side, which we had not; in the next place we should have had dextrocardia, which was not the case; and, thirdly, we should have had a depression of the diaphragm, and a consequent depression of the stomach, the exact reverse of which existed here.

The next view that presented itself for our consideration was that of extensive effusion into the pericardium. We had seen effusion into the pericardium so considerable as to push the lung entirely aside, and so to compress it when displaced, as to render it almost, if not altogether, impervious to the air. But we could not accept this explanation of the phenomena here. For were the effusion so considerable as to produce them, it would have caused that peculiar arched appearance (*voussure*) of the side which is the constant effect of extensive pericardial effusion, and to which Louis has directed attention. This was not the case here. Besides the heart's action was heard more distinctly than it would have been had the pericardium been filled with fluid; and, lastly, a pericardium distended with fluid would have pushed down the diaphragm and stomach equally with effusion into the pleura.

The third view left for our consideration was the dependence of these phenomena on some morbid solidity of the lung itself. The ascent of the stomach seemed to us to afford a key to the explanation of the change which we believed the lung to have undergone, and which we believed also accounted for the physical phenomena. As there is no other pathological condition of the lung that could have allowed the ascent of the diaphragm, and consequent ascent of the stomach, but cirrhosis, we judged this to be the condition of the organ, and ascribed it to an original pleuropneumonia. At the same time that I gave it as my opinion that the physical signs depended on cirrhosis of the lung, I also expressed my strong conviction of the existence of malignant disease, grounding my suspicion on the want of proportion between the gravity of the symptoms and the apparent local lesions.

The treatment consisted chiefly in counter-irritation to the side, and such diet as a fastidious appetite would allow. He seemed to amend slightly; and, on the day of his death, he sat up in his bed

to his breakfast, ate an egg and drank a cup of tea, and fell back lifeless. He had only been in hospital 10 days.

*Post mortem examination.*—On opening the thorax there was on the left side a circumscribed pleuritic effusion of serum, moderate in quantity, retained in its place by adhesions. This pressed upon a portion of the lung which was connected by adhesions with the pericardium, and this lung, from being thus compressed, had become carnified. In the top of the lung there was a quantity of blood effused into the parenchyma of the organ, forming an apoplectic clot about the size of a small orange. The entire of the posterior portion of the lung, with the whole of the base which rested on the diaphragm, was converted into a tough fibro-cellular mass, in the midst of which were several small hard tumours, varying in size, but distinct in their outline. The base of the lung adhered so firmly to the diaphragm that it could with difficulty be separated from it. The portion of the diaphragm to which the lung adhered was so drawn up towards the thorax, that it formed a cup-shaped concavity towards the abdomen. The part of the lung which was chiefly transformed into the fibro-cellular structure, and which exhibited most of the hard carionomatous tumours—for such we believe to have been their real pathological nature, as well from their appearance as from the unquestionable carionomatous nature of other tumours found in the progress of our examinations—lay alongside of the spine. The whole lung was considerably shortened in its longitudinal diameter. There was a large mass of hard scirrhous glands in the posterior mediastinum, in the midst of which the descending aorta ran. The surface of both pleuræ-pulmonales was densely studded with small hard granules about the size of millet seed. In the substance of the walls of the left ventricle of the heart, anteriorly, there was a hard scirrhous tubercle as large as a filbert nut, and another of the same nature, but smaller, in the substance of the right ventricle posteriorly. Both were deeply imbedded in the muscular structure.

A portion of the sixth rib, about mid-way between its two extremities, exhibited an enlargement like an exostosis or node projecting into the thorax. It was about an inch and a half in its long axis. A knife easily penetrated into it and gave issue to a considerable quantity of greenish-yellow encephaloid matter. The liver, not altered in size, exhibited, on its superior surface, two characteristic cancerous tubercles, umbilicated or depressed on their surface, each about the size of a chestnut, well-marked specimens

of Farr's tubercle. There were also small hard tubercles in each kidney, as also in the spleen. The abdominal surface of the diaphragm on the left side was studded with small hard granular tubercles. If there existed any doubt as to the nature of the diseased products found in the different organs, the unequivocal character of those in the liver would be enough to remove it. Of their true cancerous nature there is no question. We are well aware there is a large white tubercle of the liver besides that which we so confidently assert to be the true cancerous tubercle. But the former has not what we deem the essential characteristic of cancer, viz., its cup-shaped dimpled upper surface. The former we believe to be scrofulous; and where it exists other scrofulous tumours will also be found. In this view my experience concurs with Mr. Collis, who has devoted so much attention to the subject of cancer. Assuming these pathological products to be cancerous, we believe the records of pathology hardly afford an instance of a more extensive development of the disease, or one in which more organs were implicated. Cancer of the heart has been very rarely met with. The present case is the second that has occurred to us, and under very similar circumstances. It is remarkable, too, how little there was to indicate the cardiac affection. There was, in fact, nothing to excite a suspicion of its being the seat of malignant disease. It reminded us of what we had often witnessed, viz., the existence of extensive cancerous development in the stomach, which had not been suspected during life, and which owed its obscurity to its not involving either the pyloric or cardiac orifice. So, the cancerous affection here did not, from its peculiar position, damage the working of the machine.

The case presents us with many most interesting considerations. In consequence of having only seen it so late in its course we are left to our own conjectures as to how it proceeded; and, from our own observation, and from what we could learn of the history of the case, we would divide it into four distinct periods or stages. We have little doubt of its being, in the first instance, an attack of pleuropneumonia terminating in cirrhosis of the lung, and that it was this that caused that contracted condition of the organ which allowed the ascent of the diaphragm, and of the stomach, and so gave rise to the clear tympanitic sound so unusually high. In fact no other condition of the lung than that of cirrhosis could explain the abnormal ascent of the stomach, which was so remarkable that the thought occurred to me if it could be a second instance of that

I once saw in a case which had been under the care of Dr. Osborne in Sir Patrick Dun's Hospital, when *post mortem* examination discovered the stomach above the diaphragm in the left pleural cavity. We would here express our conviction that the termination of the pleuropneumonia in cirrhosis indicates to us a certain dyscrasia, or pathological state of the blood, as we have ever found it when there were other indications of constitutional deterioration. Thus we have seen it in fever; and, from the very close resemblance between many both of the physical signs and constitutional symptoms of cirrhosis and phthisis pulmonalis—we have seen an individual affected with cirrhosis, who had had pleuropneumonia in the course of his fever, declared to be in consumption—I think we may adopt the language of Rokitsanski, and designate it an unhealthy fibrin crasis. We believe the cancerous development constituted the second stage of the morbid process, and that the fibrinous exudate was the chief although not the exclusive matrix of this morbid product.

We regard the pulmonary apoplexy as the third stage. We know how frequently it occurs with cirrhosis of the lung; it is one of the symptoms which it and phthisis have in common, and which almost more than any other has contributed to this lesion being confounded with phthisis pulmonalis. We can easily believe that the coagulum that occupied the top of the lung had been there since he had been in Stevens' Hospital, six weeks previously, although the hemoptysis may have ceased; for we know how often we have extensive effusion of blood into the pulmonary parenchyma and no hemoptysis. There was no trace of blood in the scanty sputa while Darling was under my care. We would here remark that the pulmonary apoplexy, which in this case was in the cirrhotic lung, is more frequently found in the opposite lung—a fact which I believe I was the first to notice, and which appeared to me to be an additional proof of the identity of the pathology of cirrhosis of the liver and cirrhosis of the lung, the hemorrhage in each taking place at a distance from the organ originally affected, being from the stomach in one and from the sound lung in the other. We look upon the circumscribed pleuritic effusion as the fourth stage, and the last straw that broke the camel's back.

Many years since I had a case similar to the preceding one in many particulars. The subject of it was a female, about 40 years of age. She was admitted under my care, in Sir Patrick Dun's Hospital, for extreme oppression of her breathing. Her story was,

that she was attacked with very acute pain in her left side; that the pain ceased, but then her breathing became very much oppressed. The signs of extensive effusion into the left pleura were very unequivocal; the side was considerably dilated; the heart, however, retained its normal position; the condition of the patient was extremely low, and her countenance bespoke considerable distress. I employed such means as seemed to me calculated to promote the absorption of the fluid, but with little, if any, success. I then consulted with Dr. Graves and Surgeon Cusack as to the expediency of removing the fluid by operation. Dr. Graves thought that the fluid most probably was pus; that it was in fact a case of empyema, and therefore that the operation was not likely to be attended with success. I could not agree with him as to the nature of the fluid, believing, from the symptoms that ushered in the attack, that it was acute pleurisy terminating in serous effusion. Had I believed that it was a case of empyema, instead of serous effusion, so far from this influencing my opinion against operation it would have disposed me in its favour. Mr. Cusack fully believed that it was a case of acute pleurisy terminating in serous effusion, but did not advise the operation, alleging as his reason that he did not consider the effusion into the side enough to explain the low depressed condition of the patient, an opinion in which I entirely concurred. The poor woman did not survive the consultation many days; but before her death we were apprized of a fact which had not been made known to us before, viz., that six months previously her right breast had been removed for cancer.

Examination of the body disclosed a very copious collection of straw-coloured serum, with large masses of lymph floating in it, in the cavity of the left pleura. The entire of the left lung was enveloped in a dense fibro-cellular membrane, in some places, especially near the apex, almost half an inch thick. The base of the lung was firmly adherent to the diaphragm, and was separated from it with some difficulty. The portion of the diaphragm on which the lung rested, as well as the base of the lung, were densely studded with small granular tubercles, like millet-seed. These were also seen on the entire surface of the false membrane, as well as on the pleura of the right lung. In the upper part of the left lung there was a tumour the size of a small orange, consisting of encephaloid matter; lower down in the organ, nearly to its base, there were other tumours varying in size and consistence. Some were like soft cerebral substance in a state of decomposition, and

closely resembling it in appearance; others were firm and elastic, like cartilage, and contained in their centres a milky fluid. The pulmonary structure interposed between the tumours was pushed aside and condensed. The tumours maintained their distinctness, and could be removed from the pulmonary structure in which they were imbedded without lacerating the structure. On the anterior surface of the heart, midway between the apex and base, there was a projecting tumour about the size of a small hazel nut, half of which was sunk in the substance of the left ventricle, while half was above the surface, but seemed to have been flattened by rubbing against the opposite pericardial surface in the motion of the organ. This tumour was of a hard scirrhus structure, resembling the small tumours in the lung. There was no more cancerous development in other organs where it is so often met with in the cancerous cachexia.

The phenomenon of cancer of the heart is very rare. Cruveilhier does record cases of it, but Rokitanski does not even name the heart in his catalogue of organs in which this disease appears, placing them in order according to the frequency in which it appears. The peculiar anatomic constitution of this organ, into whose structure so small a proportion of areolar tissue enters, would yield an explanation why it is so rarely the subject of those pathological conditions to which organs, into whose structure it enters more largely, are exposed; and of cancer, amongst the rest. We can readily understand why nature should purposely admit as little as possible of the structure which may be said to be the very matrix of almost all pathological changes into the constitution of an organ whose healthful condition is so essential to life. We are persuaded myocarditis is an infinitely more rare disease than it is reported to be. If this were not the case, should we not at least occasionally see some of the ordinary terminations of inflammation in the substance of the heart among the numerous pathological specimens presented to us by fatal pericarditis or endocarditis? Cardiac pathology has ever been with us a subject of deep interest for many years, and under very favourable circumstances for studying it, yet we have not met with an instance of myocarditis terminating in suppuration, or in unequivocal abscess of the heart. But we have met with cases which, to a superficial observer, might be mistaken for abscess of the heart, where a false membrane, the organized result of a former inflammation of the pericardium covering the heart, and perhaps effecting an adhesion with the

opposite pericardial surface, becomes the seat of subsequent inflammations, and of suppuration, which may appear to sink into the substance of the organ. We have examined the recorded cases of suppuration of the heart with some degree of care, and find but few, if any, in which there was not membranous inflammation—pericarditis, and to which our explanation would not apply. In fact the substance of the heart appears to enjoy a very remarkable immunity from inflammation and its terminations, which we attribute to the peculiarities of its organic constitution.

We felt a good deal interested in the verification of our diagnosis as to the nature of the effusion, which we affirmed to be serous, and not purulent, from the symptoms which ushered in the attack being those of ordinary acute pleurisy. We regard it as a very common mistake to consider empyema, or an inflammation terminating in purulent effusions, as of a more intense character than that which terminates in serous effusion. On the contrary, as far as regards the character of the symptoms that usher in each, those of empyema exhibit generally much less constitutional disturbance, never being attended with the sharp pain (*point du cotè*), the constant symptom of acute pleurisy when the effusion is serous, there being at most not more than a dull aching sensation, and frequently not even this. In empyema, too, often there is no excitement of the circulation, the pulse not exceeding its normal number in the minute, nor is there usually any excessive heat of skin. Such, at least, are the features of empyema, as it has fallen under our observation; and most of the subjects being of a strumous habit, the constitutional symptoms assumed the indolence of character that marks this peculiar cachexy. We should say that this disease, if we be allowed to say so, has been chronic in its character even from its origin. The description we have just given of empyema we would alone apply to empyema in which the fluid has been purulent from its commencement, what we would designate an original empyema; not to that which succeeds to a serous effusion when the operation of paracentesis thoracis has been employed, and where, when the operation requires to be repeated, the fluid is now found to be purulent matter. We would explain the difference in the effusions by the difference in the states of the system at the times when the effusions took place, that they were in fact significant of two conditions—the first, bespeaking a more healthful one; the second, where the effusion was purulent matter, a less healthful, or a more degenerate state. And it appears to us that here, too,

we find the explanation of the fact established by statistics, that the operation of paracentesis thoracis has been attended with more success in cases of empyema than in cases of acute pleurisy with serous effusion. We conceive a close analogy to exist between the results of an operation performed on an individual in vigorous health, who, perhaps, may have met with an accident peremptorily requiring immediate operation, and on one who, after having been long the subject of wasting disease, has to undergo a no less serious one, and the results of the operation of paracentesis thoracis in acute pleurisy with serous effusion, and in empyema. And, as the surgeon is more sanguine as to the result of his operation performed on the subject whose health has been run down by previous wasting illness, than on him who, up to the time of his accident requiring operation, has been in full health—so statistics have proved that the physician has more reason to anticipate a successful result to his operation in empyema than in acute pleurisy. The explanation of this would appear to be that, as the higher the animal is in the scale of beings the less tolerant is he of injury; an inferior animal will bear an amount of injury that would be fatal to man. Disease has the effect of degrading the higher animal, and bringing him down to a lower condition. But with this degraded condition he also acquires the superior patience of injury; or perhaps it might be said of him, that the conditions of his existence are now more simple; so that disease thus may be said to make some compensation for its other effects. Acute pleurisy surprises one commonly in the midst of strong health. Operation in this case resembles operation on one who, in full vigour, has been the subject of accident requiring immediate operation, while the condition of the system in empyema generally resembles that which has been brought down by long disease, so it resembles it in having come into a condition better suited to bear an injury; for we may regard an operation in the light of an injury, although undertaken for a salutary end and object.

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ART. X.—*Operations for Strangulated Hernia, and their Results.*

By JOSIAH SMYLY, A.B., F.R.C.S.I., Surgeon to the Meath Hospital and County of Dublin Infirmary.

THE following cases are drawn up from notes which I have preserved; and, although all the cases I have operated upon are not

given, yet, as no selection has been made, they may be fairly considered to embrace my experience. Certainly no case has been designedly omitted because its termination was unfavourable.

#### FORM OF HERNIA.

Of the 15 cases given, eight were those of inguinal, and occurred in males; and seven of femoral hernia, all in females. Nine of the cases recovered perfectly—viz., three of inguinal and six of femoral hernia. Of the six cases which terminated fatally five were inguinal hernia.

#### DURATION OF SYMPTOMS BEFORE OPERATION IN FATAL CASES.

With regard to the time the intestine has been subjected to strangulation, I find that No. 4 was operated upon four hours after the symptoms set in, and proved fatal 36 hours after the operation. No. 5 was operated upon nine hours after strangulation, and survived for 26 hours. No. 6 was operated upon 24 hours after strangulation, and survived 26 hours. No. 7 was operated upon 53 hours after strangulation, and survived six days. In No. 3, the strangulation existed for six days, and the patient survived about three weeks. No. 15, the sixth fatal case, was one of entero-epiplocele, a femoral hernia; strangulated for 36 hours, and the patient died the fifth day after operation. All the fatal cases were hospital patients.

#### CAUSE OF DEATH IN FATAL CASES.

In all the fatal cases peritonitis was the cause of death. In No. 7 the peritonitis was kept up by persistent strangulation and sloughing of the strangulated intestine; and in No. 4 the peritonitis was caused by extravasation of the contents of the intestine, the part which had been constricted having ulcerated through, and perforation having thus taken place. In case No. 15 the peritonitis was evidently caused by the omentum having been left in the sac. In case No. 2 the thickened omentum was cut away; and in case No. 8 it was returned into the cavity of the abdomen; and both these cases did well.

The success attending the cutting away of the thickened omentum bears out the truth of the statement of Sir A. Cooper, Mr. Laurence, and Mr. Teale, that excision of the omentum, and ligature of its vessels, is a mode of treatment "unattended with danger."

## SEAT OF STRICTURE.

In five of the cases of femoral hernia the stricture was relieved by cutting Gimbernaut's ligament; in one the stricture was caused by the cribriform fascia.

No. 14 shows the importance of observing the rule to avoid any sawing motion in dividing the stricture, and simply to press the knife against the stricture till it gives way. In No. 8 the seat of stricture was in the body of the tumour, and the constriction was caused by the contraction of what was formerly the neck of a sac. The case shows how a new sac may form above an old one, the old sac being pushed further down into the scrotum. It shows how the neck of a sac can become a constricting agent independently of muscular contraction, or the pressure of tendinous rings or fasciæ.

## AGE OF PATIENTS.

The ages of those who recovered after operation were—males, 20, 50, 62; females, 20, 24, 70, 80, 58, 35.

The ages of those who died were—males, 70, 32, 40, 45, 59; female, 34.

## CHARACTER OF THE SAC.

The strength of the sac is found to vary considerably. No. 3 is an example of a hernial sac of great thickness.

CASE I.—*Strangulated Inguinal Hernia; Operated on upon the Third Day of its Strangulation; Recovery.*—P. L., aged 20, a servant, subject to reducible inguinal hernia on right side. On Friday he was heaving a large stone, when he felt severe pain in his rupture. He was unable to reduce it. Various means were used by the village doctor, but unsuccessfully; amongst others, croton oil was given to force a passage. On Sunday I found him in intense agony; he had his buttocks up against the wall, and was resting on his neck and shoulders. No impression could be made on the tumour by the taxis. The usual operation was immediately performed, and the sac opened into. A large quantity of fluid was found in it, and a small knuckle of intestine. When this was returned, a considerable quantity of serum flowed out from the cavity of the peritoneum.

Some hours after the operation the patient was bled, and was put upon calomel and opium, by which means the inflammatory symptoms were relieved, and he made a good recovery.

CASE II.—*Strangulated Entero-Epiplocele; Inguinal Hernia; Operation; Recovery.*—P. D., aged 62 years, a labourer, has had a reducible inguinal hernia, on the right side, for the last 10 years; he has worn a badly-fitting truss. He was admitted into the Meath Hospital, September 14th, '62, with the symptoms of strangulation, which had existed for the last 24 hours. A turpentine injection was immediately administered, 30 drops of solution of morphia given, and the taxis tried, assisted by a warm bath, at 103 degrees of temperature, and patient put under the influence of chloroform. All having failed, the operation was performed at half-past four o'clock, p.m. On opening the sac, a considerable quantity of dark-coloured fluid was discharged. The chief bulk of the tumour was found to be composed of thickened omentum, which surrounded the strangulated intestine. On freeing the stricture, the intestine was easily returned, but the omentum was so thickened and enlarged as to prevent its reduction. Having secured the neck of the omental tumour with a dressing forceps, the mass was cut away; the arteries were tied with fine silk, the ligatures being left long. The truncated portion was allowed to remain in the neck of the sac; the lips of the wound were brought together by three points of suture, &c.; calomel and opium ordered. Seventeen hours after the operation, it was reported that he had a good night; no vomiting.

Sept. 22nd. Abscess has formed in the scrotum, which was opened this day. 28th. Two more abscesses have formed.

Oct. 6th. Able to wear a truss, and to sit up.

Nov. 12th. Have just heard that D. is quite restored to health.

CASE III.—*Strangulated Inguinal Hernia; a Very Thickened Sac a source of Error; Death.*—J. H., aged 70, for some time subject to reducible inguinal hernia on right side. He never wore a truss. The intestine became incarcerated on Monday, Jan. 22nd, 1848; on the 25th he was sent from the country, and admitted into the Meath Hospital. The taxis, assisted by O'Beirne's long tube, large cupping glasses applied to abdomen and pulled so as to make a tendency to a vacuum, turpentine enemata, &c., made a very considerable alteration in the shape and size of the tumour. My impression was that the intestine was reduced, but that omentum remained strangulated. A warm bath was ordered, and afterwards ice to the tumour. 26th. Patient vomited last night, but not since; bowels have not been freed; he is delirious; the tongue is coated white, and brownish in the centre; pulse frequent. In

consultation, at 10 o'clock, it was determined to postpone operating till 3 o'clock. It was the opinion of all that the symptoms were not now depending upon strangulated intestine, and that the tumour contained omentum only. At 4 o'clock it was agreed upon to operate. The sac was found to be enormously thickened; it contained nothing but serum; the lower part of the sac was cut away; its walls were half an inch thick; the wound was closed by sutures.

Feb. 3rd. Eighth day after operation. Tongue cleaning; wound suppurating; a small spot of the skin of the scrotum is sloughing. 12th. Wound healing. 13th. Left the hospital, being anxious to return home.

I have since learned that H. gradually sunk, and died some days after getting home.

CASE IV.—*Strangulated Inguinal Hernia; Operation Four Hours after Strangulation; Death, by Peritonitis, Thirty-four Hours after the Operation.*—M. C., aged 32, has had reducible inguinal hernia for the last 15 months. At 8 o'clock, p.m., got a fall, which caused a larger protrusion of intestine than usual to take place; this was attended with great pain. He was carried to the Meath Hospital an hour after the occurrence; when a warm bath was given, blood was taken from the arm, and cupping glasses applied to the abdomen. A tobacco enema was given to assist the taxis. I saw him at midnight, and found him in a state of collapse from the tobacco enema, but suffering intense pain from the hernia. Entreating that he should be "cut open," or anything else done that would give him relief, the operation was then performed. Much difficulty was experienced in returning the intestine; it was distended with gas. The contents of the sac consisted entirely of small intestine. Two arteries being tied, the wound was closed by sutures, adhesive plaster compress, and bandage; 20 drops of Battley's sedative were given, but immediately after rejected from the stomach. One grain of opium in a pill ordered. The following day the report was most favourable. He got immediate relief after the operation. There was no tension nor tenderness of the abdomen; no vomiting nor hiccup; bowels had acted freely; tongue rather white; great thirst; pulse 100. In the afternoon, 15 hours after the operation, great pain and tenderness of the abdomen set in, with vomiting. Venesection was performed; calomel and opium ordered; a drachm of mercurial ointment placed in the axillæ, and a blister applied to the abdomen. Third day, it was reported that he was much relieved

by the bleeding; but this morning he was found in a collapsed and dying state; he expired at 10 o'clock, a.m., 34 hours after the operation. On *post mortem* examination, it was found that the intestine, where it had been strangulated, had sloughed, and a small perforation had taken place, which was the immediate cause of the peritonitis. The sac was found distended by fluid, which led to the supposition, during life, that the intestine had again descended.

CASE V.—*Inguinal Hernia on Right Side; Strangulated only for Nine Hours when Operation was Performed; Died Twenty-six Hours afterwards of Peritonitis.*—A man, aged about 40, subject to reducible inguinal hernia, on right side, for the last 14 years. Having gone to bed in a state of intoxication last night, he was roused, at three o'clock this morning, with symptoms of strangulated hernia. He was brought to the Meath Hospital at six o'clock, a.m., January 9th, 1845. At half-past 12 o'clock, noon, nine hours after first symptoms appeared, the taxis, and all means to assist it, having failed, the operation was performed, and the protruded intestine (which was intensely red) was reduced. There being evidence of general peritonitis, the patient was bled from the arm, in the afternoon, and calomel and opium given. Notwithstanding all the efforts that were made, the patient sunk, and died in the evening. On *post mortem* examination extensive peritonitis was discovered; no cause, except the previous strangulation, could be found.

CASE VI.—*Strangulated Inguinal Hernia; Operation performed Twenty-four Hours after Strangulation; Fatal in Thirty Hours.*—A man, aged 45 years, subject to reducible inguinal hernia for two years, which became irreducible on December 24th, 1845. He was treated by a practitioner, for an enlarged gland, for 24 hours. On the 25th he was brought to the Meath Hospital. The taxis having failed, the operation was performed at 12 o'clock, noon. 26th. Considerable abdominal tenderness; inclination to vomit; pulse frequent; anxious countenance; ordered 12 leeches to the abdomen, a blister to the epigastrium, and a turpentine enema to be given immediately.

December 27th, he died, 30 hours after the operation, of peritonitis.

CASE VII.—*Strangulated Inguinal Hernia; the Seat of Strangulation not Discovered; Sloughing of the Intestine; Peritonitis;*

*Death.*—W. I., aged 59, a coachman. At noon, on the 5th Jan., 1846, while riding one horse and leading another, the one on which he was riding stumbled, and the other darted forward, and dragged him forcibly against the pommel of the saddle. He made a violent effort to pull up the falling horse, and felt a “giving way, accompanied with a tearing pain, and spasms in the lower part of the abdomen.” On the 7th he was brought to the Meath Hospital. The taxis, assisted by venesection to 30 ounces, tobacco enema, &c., having failed, it was resolved upon to operate at five o’clock, p.m. The sac was found thickened. It, to the surprise of all, contained nothing but dark, tarry, and fetid blood. The ring was divided; the patient expressed himself as having obtained relief; the finger was introduced into the cavity of the abdomen, and turned all round, but no intestine could be discovered connected with the ring. The wound was closed; calomel and opium ordered to be given every three hours. The symptoms of strangulation continued unabated—viz., the hiccup and stercoraceous vomiting. On the night of the 13th he died. On *post mortem* examination there was evidence of intense peritonitis; effusion of lymph coating the intestines; of a bloody fluid in the cavity of the peritoneum; the intestines were found distended with flatus; a small knuckle of intestine, completely sphacelated, was found in a pouch behind the cord, in the situation of hernia by direct descent; it was quite concealed by the old hernial sac. At the operation it eluded the observation of the most experienced and discerning of my colleagues.

*CASE VIII.—Strangulated Inguinal Hernia; Stricture in the Body of the Sac; Operation Forty-eight Hours after Strangulation; Recovery.*—R. M., aged 50, a hairdresser, has had a reducible inguinal hernia, on the right side, for nine months. It came on in consequence of over-exertion while running.

On March 8th, 1841, symptoms of strangulation set in. Patient had eaten bacon and cabbage for dinner the day previous. When admitted into the Meath Hospital he was exceedingly low and faint; pulse was small and frequent; countenance pale and sunken; had frequent vomiting and hiccup; O’Beirne’s long tube and other means to assist the taxis were employed; but, as no impression could be made upon the tumour, the operation was performed at 11 o’clock, a.m., on the 10th. This case presented a peculiarity, inasmuch as the stricture was found in the body of the sac, between its superior and middle third; the intestine above the constriction

was soft and reducible, that below was thickened, and felt solid; it was highly vascular, and its surface coated with lymph; there was a deep depression between the sound and strangulated intestine; there was a considerable portion of fatty and thickened omentum, as well as intestine, in the sac; it required some manœuvring to reduce the protrusions. The wound was closed with four points of suture; a compress and bandage were applied. In four hours reaction was established; 10 ounces of blood were taken from the arm, and a draught given, with 20 drops of acetum opii, immediately after the operation; two grains of calomel and half a grain of opium to be given every two hours.

11th. Going on well; quite free from pain, vomiting, &c.; countenance calm; pulse 80.

This patient recovered, but was liable to protrusions of the intestine. Two years after his recovery he had an attack of strangulation. He was seen seven hours after the first symptom appeared; and the hernia was reduced by the taxis, assisted by the application of ice to the tumour, and a turpentine enema. The most decided advantage was derived from acetate of morphia, half a grain given every half hour.

The state of the case was very unpromising at first. The tumour was so large that it could not be grasped in the two hands; it was extremely hard, and very painful, and patient had frequent vomiting. However, after the second dose of morphia, the whole was replaced.

CASE IX.—*Strangulated Femoral Hernia, Right Side; Operation; Recovery.*—Miss C., aged 20, has had a hernia for some months. She was told by a medical man that the tumour in her groin was an enlarged gland. She paid no particular attention to it. One evening she was seized with pain in the tumour, followed by vomiting, and immediately sent for assistance. The taxis, assisted by the application of ice, &c., having been tried during the night, next morning, in consultation, and assisted by Mr. Cusack, the operation was performed, 12 hours after symptoms of strangulation set in. The patient recovered without a bad symptom.

CASE X.—*Strangulated Femoral Hernia; Stricture Divided without Opening the Sac; Cure.*—M. R., aged 24, servant, subject to crural hernia, on right side, for last two years. She states, that during this period it had become incarcerated six times; and that having suffered violent vomitings for eight or

10 hours, the protrusion returned spontaneously. She was admitted into the Meath Hospital on the morning of the 14th of January, 1837, in a state of collapse; pulse 60, feeble; vomiting occasionally; intense pain both in the tumour and in the abdomen. Ice was applied to the tumour, and large exhausted cupping glasses to the abdomen, by means of which traction was used so as to elevate the parietes, and draw in, as it were, the hernial tumour. The taxis having failed, and hiccup having come on, it was determined, in consultation, to operate. On the cribriform fascia being divided, above and below the tumour, it was manifest that the constriction was relieved; gentle pressure was employed, and the intestine was returned, without opening into the sac. The patient expressed herself as freed from all uneasiness the instant the intestine was replaced.

The wound was dressed in the ordinary way, and the patient made a rapid recovery.

**CASE XI.**—*Strangulated Femoral Hernia; Operation; Recovery.*—Mrs. F., aged 70 years, subject to reducible femoral hernia, right side, for the last 20 years. She has worn a truss. On the 5th of February, 1858, a small knuckle of intestine became incarcerated; on the 8th severe vomiting set in. All attempts at reduction having proved useless, on the 10th February the operation was performed. The stercoraceous vomiting continued for some time after she was removed to her bed; the symptoms gradually subsided; the bowels acted well on the 11th. She made a good recovery.

**CASE XII.**—*Femoral Hernia; Strangulated for about Thirty Hours; Operation; Cure.*—Miss W., aged 80, affected with bronchitis; of regular habits, and very temperate; subject, for some time, to reducible femoral hernia, but never wore a truss. On the 22nd of March, 1851, the protruded intestine became strangulated. Next morning bilious vomitings set in, when she sent for assistance. Terebinthinate enemata were administered, and ice was applied to the tumour. The taxis was persevered with for seven hours. The ordinary operation, by opening the sac, was then performed; when visited, four hours after, she was free from vomiting and pain; the pulse was still frequent; small doses of calomel and opium were ordered. On the 13th day after she was sitting up—the wound nearly quite healed. Miss W. lived for many years, and had no return of the hernia.

CASE XIII.—*Strangulated Femoral Hernia; Operation; Cure.*—Mrs. W., aged 58, subject to reducible femoral hernia on left side, for some years. She wore an inefficient truss. The hernia had been strangulated for 22 hours. The taxis, assisted by tobacco enemata, having failed, the operation was performed. There was an immense quantity of fat external to the sac, which rendered the operation difficult. The stricture, at the neck of the sack, being divided, the bowel, which was of a dark livid colour, was returned. Immediate relief of all the symptoms followed the operation. The patient made a good recovery.

CASE XIV.—*Strangulated Femoral Hernia, unattended by Constipation; Vermiform Appendix in the Sac; Operation; Recovery.*—Mrs. G., the wife of a physician, aged 35, having eaten greens at dinner, was seized with colicky pains in the stomach at night. In the morning she perceived, for the first time, a tumour in the right groin; she had no vomiting, but nausea; she, that evening, took aperient pills, which operated in the night. May 31st, 36 hours after first symptom set in, sent for assistance. The tumour, which was of an oblong shape, and not as large as an egg, was quite irreducible. Ice was applied. June 1st., calomel, followed by sulph. of magnesia, given; *bowels were affected*. The taxis having failed, the operation was performed at seven o'clock, p.m. The sac was found full of bloody serum. The vermiform appendix alone was found strangulated. This case did well; there was neither fever nor inflammation after the operation. She made a rapid recovery.

CASE XV.—*Entero-Epiplocele; Femoral Hernia; Operation; Omentum Left in Sac; Peritonitis; Death on Fifth Day.*—A female, aged 34, subject to reducible hernia for 16 years. The operation was performed on the third day after the strangulation took place. Besides a knuckle of intestine, a considerable portion of omentum, converted into a solid mass, was found adhering to the sac, and caused much difficulty in discovering its neck. The stricture being freed, and the intestine returned, it was determined upon to leave the omentum in the sac. The wound was closed by sutures, &c.; calomel and opium were ordered, and leeches to the abdomen. Third day after operation—no tenderness on pressure over the abdomen, nor any symptom of peritonitis. Fourth day—peritonitis has set in; ordered 20 leeches, a blister to the abdomen, and calomel and opium. She died on the fifth day after the operation.

*Post mortem examination.*—A large quantity of purulent matter

was found in the cavity of the peritoneum; the portion of intestine which had been strangulated had so recovered as not to be distinguished from the other intestines; the omentum in the sac was much inflamed, and was evidently the source from which the peritonitis sprung.

It was remarkable in this case that the obturator artery was given off from the epigastric, and ran a great risk of being wounded. It must have been pushed upwards on the bistoury used as a wedge. Had a sawing motion been given to the instrument the artery must have been cut; it was found crossing the wound in the fascia, just as the cross stroke in the letter A.

ART. XI.—*On the Causes and Treatment of Closure and Immobility of the Jaws.* By CHRISTOPHER HEATH, F.R.C.S., Assistant Surgeon to, and Lecturer on Anatomy at, the Westminster Hospital.

CASES of permanent closure of the jaws from cicatrices within the mouth, &c., are not of very rare occurrence; but their description and treatment seem to have been very generally neglected by modern English authors. Erichsen, Pirrie, Druitt, and Skey make no mention of the affection; and Samuel Cooper, in the last edition of his *Surgical Dictionary* which he revised, merely refers to a case treated by Valentine Mott, who, in 1831, operated on a case of sloughing of the cheek, with subsequent closure of the jaws, by transplanting a piece of skin; but he enters no further into the treatment. In the *new* edition of *Cooper's Dictionary*, 1861, Vol. I, the only passage I can find, bearing on the question, is the following, under the head of "Cicatrization":—

"In the mouth, after sloughing of the cheek and gums from profuse salivation, the cicatrized surface is so rigid as scarcely to allow of the separation of the teeth, but it becomes more pliant in time." This latter statement, however, is not borne out by general experience.

Mr. Fergusson, in the last edition of his *Practical Surgery*, p. 602, says:—

"The lower jaw occasionally becomes so closely bound to the upper, that the teeth cannot be sufficiently separated to admit of solid food. This condition may arise from inflammation and

adhesion of the gums, more especially after necrosis of the alveolar processes; sometimes it is the result of chronic contraction of a muscle; occasionally it has been accompanied with ankylosis, both here and in other joints, of which there is a remarkable specimen in the possession of Mr. Dubreuil, of Montpellier, in which, however, a similar condition was not present in any other part of the same skeleton; and in certain examples it is difficult to say what is the cause. Some years ago I had a patient with the mouth thus contracted, and in whom there was a portion of the lower jaw in a state of caries; the disease was not in such a condition that I could, with propriety, attempt its entire removal. A portion of bone, however, was excised, but little benefit resulted, and what there was might probably be attributed more to the use of a screw-dilator than to the partial removal of what I considered a source of irritation. Mott has succeeded, in two instances, in relieving such permanent adstrictions; and in the first volume of *The Provincial Medical and Surgical Journal*, there is a case recorded wherein I was fortunate enough to produce a similar effect, by dividing the masseter on one side with a narrow knife, passed from the mouth between that muscle and the skin. If ankylosis be the cause of closure, it is doubtful if the surgeon would be justified in interfering. In the course of my experience I have seen many instances of the kind above referred to, but feel bound to state that most of my attempts at improvement have utterly failed."

By far the most complete account of this affection, however, is given by Dr. Samuel Gross, of Philadelphia, in his large work on surgery, from which I take the following quotation:—

"*Ankylosis or Immobility of the Jaw.*—This distressing affection, which may be produced in a variety of ways, may exist in such a degree as to render the patient entirely unable to open his mouth, or to masticate his food.

"The most common cause, according to my observation, is profuse ptyalism, followed by gangrene of the cheeks, lips and jaw, and the formation of firm, dense, unyielding, inodular tissue, by which the lower jaw is closely and tightly pressed against the upper. Such an occurrence used to be extremely frequent in our southwestern states during the prevalence of the calomel practice, as it was termed, but is now, fortunately, rapidly diminishing.

"Children of a delicate, strumous constitution, worn out by the conjoint influence of mercury and scarlatina, measles, or typhoid

fever, are its most common victims; but I have also seen many cases of it in adults and elderly subjects. In the worst cases there is always extensive perforation of the cheeks, permitting a constant escape of the saliva, and inducing the most disgusting disfigurement.

“Secondly, the affection may depend upon ankylosis of the temporo-maxillary joints, in consequence of injury, as a severe sprain or concussion, or arthritic inflammation, leading to a deposition of plastic matter, and the conversion of this substance into cellulo-fibrous, cartilaginous, or osseous tissue. I have met with quite a number of such cases, several in very young subjects.

“Thirdly, the immobility is occasioned by a kind of osseous bridge, extending from the lower to the upper jaw, or from the lower jaw to the temporal bone; such an occurrence, however, is not common, and is chiefly met with in persons who have suffered from chronic articular arthritis.

“Finally, immobility of the jaw may be caused by the pressure of a neighbouring tumour, especially if it occupies the parotid region, so as to make a direct impression upon the temporo-maxillary joint.

“However induced, the effect is not only inconvenient, seriously interfering with mastication and articulation, but it is often followed, especially if it occur early in life, by a stunted development of the jaw, exhibiting itself in marked shortening of the chin and in an oblique direction of the front teeth.

“When complicated with perforation of the cheek and destruction of the lips, the patient has little or no control over his saliva, and is so terribly deformed as to render him an object, at once, of the deepest disgust and the warmest sympathy.

“The treatment of this affection must depend upon the nature and situation of the exciting cause. When the difficulty is in the joint, occasioned by the formation of cellulo-fibrous adhesions, the only thing that can be done is to break up the adhesions, upon the same principle as in ankylosis of any other joints. For that purpose—the patient being thoroughly under the influence of chloroform—the jaw is forcibly depressed, either by a wedge made of cedar-wood or by an instrument constructed on the lever-and-screw principle, and figured by Scultetus in his *Armamentarium Chirurgicum*.

“When the immobility depends upon the presence of inodular tissue, the proper remedy is excision of the offending substance, an operation which is both tedious, painful, and bloody, and unfortunately, not often followed by any but the most transient relief,

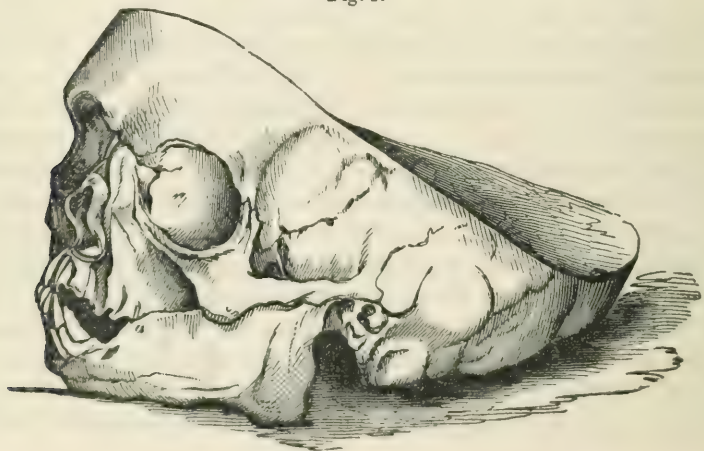
owing to the tendency in the parts to reproduce the adhesions, however carefully and thoroughly they may have been removed. There is the same remarkable disposition in these cases to the contraction and regeneration of the inodular tissue as in the case of burns and scalds.

“During my residence in Kentucky I had a large share of such cases; and, although I never failed to make the most thorough work—not unfrequently repeating the operation several times, at intervals of a few months—it is my duty to state, that few of them were permanently relieved. After the excision is effected the patient must make constant use of the wedge, wearing it for months and years so as to counteract the tendency to re-closure.

“Immobility of the jaw, caused by the formation of an osseous bridge, might possibly be remedied by the removal of the adventitious substance by means of the saw and pliers. The great difficulty, however, in such an event, is the obscurity of the diagnosis.”

Omitting any further allusion to the second variety of ankylosis here referred to by Dr. Gross, viz., ankylosis of the temporo-maxillary articulation (of which there is a very perfect specimen in the Museum of Guy's Hospital, No. 1070), I will pass to the rigidity caused by cicatrix, or by a bridge of bone, good examples of both of which affections have lately been under treatment at the Westminster Hospital—one by Mr. Barnard Holt, and two by myself. And I am also enabled, by the kindness of Mr. J. G. French, to refer to an excellent example of ankylosis produced by a bridge of bone (Fig. 1.) which occurred

Fig. 1.



under that gentleman's care, at the St. James's Infirmary, and which he reported in the *Medical Gazette* (July 4th, 1845). The patient was 22 at the time of his death, and the closure of the jaws dated from infancy; and he was fed through an aperture made by the removal of the incisors on the left side. At the age of 14 an operation for his benefit had been undertaken by an eminent surgeon, and incisions in the mouth had been made with this object, but without any good result. On *post mortem* examination, the jaws were perfectly united on the left side, and only the smallest degree of motion was possible on the right; the soft parts were removed, and the base of the skull was macerated, when ankylosis was discovered to exist between the lower and upper jaw on the left side, the ramus of the inferior maxilla immediately internal to the mental foramen extending upwards by a broad thin plate, and uniting with a corresponding plate of the superior maxilla—a cartilaginous material forming the bond of union. The articulation of the jaws was normal.

Before giving the details of the more recent cases, however, I must refer to an essay by Dr. Frederic Esmarch, Professor of Surgery in the University of Kiel, on *The Treatment of Closure of the Jaws from Cicatrices*,<sup>a</sup> in which he investigates the pathology of the affection, and describes an operation for its relief, by the formation of an artificial joint in the lower jaw—an operation which gave most satisfactory results in one of the cases under my own treatment.

Professor Esmarch says:—

“Injuries to the mucous membrane of the cheek damage the mobility of the lower jaw in a greater or less degree by their cicatrization, as is well known.

“The cause of this ankylosis of the lower jaw is often thought to be a growing together of the inner surface of the cheek with the bones or gums; this is not a correct view, however, and has, in many cases, led to improper treatment. In order to clear up this error it is necessary to examine the conditions which, in health, make movements of the lower jaw within the mouth possible. The cavity of the mouth is divided by the alveoli and teeth into an inner and outer space; the latter is closed in front by the cheeks and lips, which form an elastic dilatable sac; within this the rows of teeth

<sup>a</sup> Die Behandlung der narbigen Kieferklemme durch Bildung eines künstlichen Gelenkes um Unterkiefer. Kiel, 1860.

can be separated from each other, even with the lips shut, and much farther when the mouth is opened. The inner surface of this sac is covered by a mucous membrane which is also very dilatable and elastic, and which forms a duplicature at the upper and lower boundaries of the outer cavity of the mouth, where it is reflected on to the outer surface of the bone, and ends on the edges of the alveolus as gum. This membrane is so elastic that when the mouth is open to its widest extent it is still by no means put on the stretch; whilst, when the mouth is closed, it presents no folds.

“It is clear that as soon as this dilatable sac shrinks together, loses its elasticity, or is replaced by a rigid substance, the mobility of the jaw must either be injured or entirely cease. This happens most frequently through the formation of cicatrices which follow ulceration or sloughing of the mucous membrane of the mouth, as from mercurial stomatitis or noma.

“The occurrence of what we call secondary cicatrix atrophy, or cicatrix contraction, is sufficiently well known. As soon as the cure commences, the movable parts of the neighbourhood, so far as they can be, are drawn by the shrinking of the newly-formed tissue towards the cicatrizing spot; slowly, it is true, but with almost irresistible power.

“If there are no parts in the neighbourhood which can be drawn together to repair the loss of substance, there necessarily follows a cicatrization of the surface; but the cicatrix remains thin, tender, and stretched to a great extent for some time at least after its formation; it is only after it has existed for a long time that it assumes a more ductile condition, so as to become something more like the natural skin or mucous membrane.

“If, therefore, the mucous membrane of the cheek be completely destroyed from one alveolus to the other, on both, or merely on one side, the resulting cicatrix must necessarily tend to press the jaws more and more closely against one another, the depressor muscles of the lower jaw being quite incapable, as experience has shown, of preventing the contraction of the cicatrix. When cicatrization is complete the elastic ductile mucous sac of the cheek is found to have disappeared, and instead of it the cicatrix tissue stretches so tightly from one alveolar edge to the other that it is scarcely possible to put the finger between it and the rows of teeth; and the teeth themselves can be separated only a little, if at all, or only shifted from side to side very slightly.

“Just the same immobility of the lower jaw follows cicatrization after sloughing involving the whole thickness of the cheek, although here the opening of the mouth is widened as far as the anterior edge of the masseter muscle, or still farther; and in this case, too, the cheek sac is entirely destroyed. In these cases it is the *quasi* lip or posterior margin of the gap which stretches tightly from one jaw to the other. If, in such cases, one is successful in covering the loss of substance by dividing the skin or by transplantation of a flap, the cicatrization of the inner surface of the flap (being uncovered by mucous membrane) necessarily has the effect of increasing the immobility of the lower jaw.

“As far as is known there are few or no means available to check the shrinking of cicatrices. It is one of Diffenbach's great services to surgery that he gave this theory its full value; it was he who first taught us to place a proper value upon this action of nature, and showed how to make it available for operative procedures under certain circumstances. Thus, he first taught how to cure the closure of the mouth by covering the margin with mucous membrane; to form eyelids which do not adhere to the globe or roll inwards after cicatrization; and many other methods which we now consider self-evident in plastic surgery.

“Also, for the treatment of the worst cases of cicatrized contracted jaw, Diffenbach has given the most rational advice when he suggests, after the separation of the cicatrix from the bones, to lay over the surface of the wound a sound flap of mucous membrane. Unfortunately, in most cases, this cannot be done, because, just in the neighbourhood of the cicatrix it is impossible to find more healthy mucous membrane. Instead of the mucous membrane one can undoubtedly do as Jaesche did (*Med. Zeitung Russlands*, 27, 1858), viz., make use of a flap of skin for a lining; still it is difficult in many cases to get such a flap from the immediate neighbourhood. I would not hesitate, however, in desperate cases—as, for instance, where there is a great deficiency on both sides, to take a flap from the skin of the arm.

“All the hitherto received methods, such as the freeing or cutting through of the cicatrix from the mouth—the separation of the whole cheek, in order to accomplish this perfectly—the extirpation of the mass of cicatrix—the application of mechanical apparatus, in order to drag the jaws asunder by degrees, &c., &c., can only be of avail in those cases where, in some angle or other, there is found a remnant of mucous membrane. If one succeeds, after separation of the

cicatrix, in preventing, by the application of mechanical means, for a long time, the cicatrization in the undesirable direction, the contraction will take place in another direction, and by degrees will drag the remnant of mucous membrane up to the skin. In every case it takes years before such methods can be properly estimated; for, as far as is known, the secondary shrinking of a cicatrix takes place very late, even after complete or sufficient healing over has occurred. Putting aside the more favourable cases, there still remain a number of patients of this kind, in whom the usual methods produce no lasting cure, just because there is no more old mucous membrane left; and for these cases I recommend the formation of an artificial joint in *front* of the contraction, in order to give, at least, the other half of the jaw some, although a limited motion, and so to lessen considerably the sufferings of those unfortunate patients.

“The formation of an artificial joint in the ramus of the jaw has already been recommended and tried by Diffenbach (*Operative Chirurgie*, I., 435), but *behind* the contraction, and naturally without any good result, since the impediment to motion lies more forward, and thus is not removed. Von Brüns has also operated in this manner without success.”

This proposal of Professor Esmarch's to form a false joint in front of the cicatrix was suggested to him by a case which came under his care in 1854, in which considerable destruction of the cheek and contraction of the cicatrix had occurred, together with immobility of the lower jaw and necrosis of a portion of it. The necrosed portion was fortunately in front of the cicatrix. The bone having been removed, it was found that mobility was restored, and a useful amount of movement obtained. Professor Esmarch thereupon suggested, at the Congress at Göttingen, in 1855, the removal of a piece of bone in cases of contracted cicatrix; but did not happen to meet with a case suitable for the operation until after it had been successfully performed by Dr. Wilms, of Berlin, in 1858, shortly after which he himself operated upon a case at Kiel, and with the best results. The operation was subsequently performed by Dittl, of Vienna (*Oest. Zeitschrift für praktische Heilkunde. Vienna*, 1859. Vol. V., p. 43), and by Wagner, of Königsberg (*Annali di Medicina di Königsberg*, 1859, Vol. II., p. 100).

Shortly after this proposal of Esmarch's, it would appear that Professor Rizzoli, of Bologna, quite independently conceived a

somewhat similar idea, but modified the proceeding by merely cutting through the jaw, without removing any portion of bone. He operated in this way first in 1857, and subsequently had three other successful cases. In Rizzoli's cases no external incision appears to have been made, but the section was accomplished from the mouth with powerful forceps. This proceeding has been followed by Professor Esterle, from whose essay in the *Annali Universali di Medicina* (Omodei, Vol. CLXXVI.) I have extracted these particulars.

Esmarch's operation appears to me to possess a decided advantage over that of Rizzoli, in the fact that a piece of bone is removed, by which the formation of a false joint is facilitated, as we know by experience in cases of resection of the elbow, &c.; and the external incision can never be a matter of any importance, whilst it admits of the application of the saw, and so avoids risk of splintering the bone.

Mr. Mitchell Henry was, I believe, the first surgeon to put Esmarch's operation into practice in this country, he having performed it a few weeks before myself. The patient was a female, on whom a variety of operations had been performed, and, among others, division of the masseter, and whom I had had under my own care at the St. George's and St. James's Dispensary, two years before, when I divided the cicatrices freely and screwed the mouth open, but without permanent benefit. Mr. Henry employed the chain saw, and removed about half-an-inch of bone. The patient, unfortunately, sank a few days afterwards, apparently from pyemia and exhaustion. In my own case I used an ordinary Hey's saw, in preference to the chain, and was enabled to remove sufficient bone to give free movement, through a small incision along the edge of the jaw. I quote the details of the case from my hospital case-book:—

Barton B., aged 15, admitted, July 1st, 1862, into Luke ward of the Westminster Hospital, with closure of the jaws. In the winter of 1855, the boy, whilst living in Cosham, Hants, suffered from extensive necrosis of the upper and lower jaws; but whether the direct result of a blow, or the consequence of fever, is doubtful. He came under the notice of Mr. Martin, of Portsmouth, in the beginning of 1856; and that gentleman removed several pieces of bone, including the first permanent molar and undeveloped bicusps of the upper, and two temporary molars of the lower jaws of the

right side, besides several smaller pieces. Contraction of the cicatrices within the mouth supervened, and he was unable to unclothe the jaws. In this state he was sent up to Mr. Fergusson, at King's College Hospital, in July, 1856, and that gentleman divided the cicatrices within the cheek, and screwed the mouth open, but without permanent benefit; for, in a fortnight, his condition was nearly as bad as before, and he has, for the last six years, imbibed the whole of his nourishment between his teeth, or by putting soft food through an aperture between two teeth on the right side.

On admission, the mouth was firmly closed, the upper teeth overlapping those of the lower jaw. There was a cicatrix at the right angle of the mouth, and a dense band could be felt within the mouth on the same side. The boy was feeble, and complained of not being able to fill his stomach with food.

Fig. 2.



Fig. 2 shows his condition at this time, when it was only by drawing the lip down with the finger that the teeth could be brought into view, the lower incisors being partially hidden by the upper, which were closed firmly upon them. On the 8th of July, the boy having been placed under the influence of chloroform, Mr. Heath made an incision, two inches long, at the lower margin of the jaw, on the right side, in front of the masseter. The facial artery was divided, and a ligature at once applied; after which the

tissues were dissected up, and the jaw exposed. The cicatrix of the lip having been divided, so as to give more room, a narrow saw, with a movable back, was passed through the first incision, and up under the cheek, and a cut made in front of the rigid band of cicatrix and molar teeth. Mr. Heath soon found that he was cutting against a tooth imbedded in the jaw, and therefore at once removed it with the elevator, after which the section was rapidly completed. The mouth was now opened, and it was found that the jaw, in front of the section, was devoid of teeth for half an inch; the saw was therefore applied again, immediately behind the canine tooth, and a wedge-shaped piece of bone removed.

The hemorrhage from the dental artery was free for a moment; but was arrested by pressure with the finger. The piece of bone included the entire thickness of the jaw, and measured rather more than a quarter of an inch along the upper, and half an inch along the lower border. It contained the mental foramen, and the end of the fifth nerve. The wound was plugged with lint, a bandage applied, and the patient carried to bed. In the evening there was a little hemorrhage, which was controlled by removing the plug of lint, and replacing it with a dry piece. The boy was comfortable, and able to take fluid nourishment. He was ordered 12 ounces of wine, and a morphia draught at night.

July 9th.—Has had a good night. The face and jaw are tender and a little swollen. The plug of lint was removed from the mouth, as it produced pain.

10th.—Wound healthy. Ordered myrrh lotion to wash out the mouth with.

14th.—Takes bread, arrowroot and beef tea. Is able to masticate readily. Ordered middle diet and extra bread. Can open the mouth to the extent of about an inch. The wound is granulating healthily, and the ligature has come away.

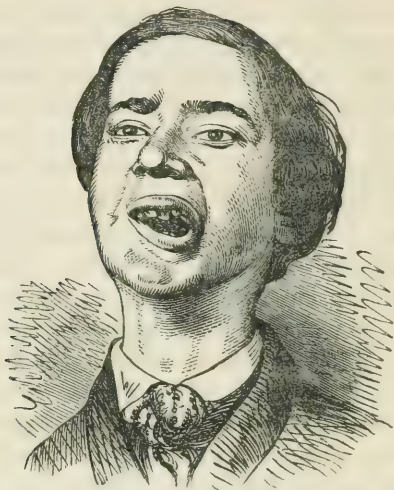
17th.—Ordered hard biscuit to eat, in order to exercise his jaw, and keep his teeth in order.

24th.—State of mouth very satisfactory; he is able to open it to the extent of nearly an inch, though the movement is necessarily one-sided. The first molar tooth of the right side was seen growing into the mouth; it was, therefore, extracted by Mr. Clendon. Wound of face granulating.

August 7th.—Discharged, to go to Walton for a month. The movement of the jaw is most satisfactory. Wound healthy, but not yet healed. Health much improved.

September 2nd.—Returned from Walton quite stout, and able to open his mouth most satisfactorily. When open to its extreme limit (Fig. 3), the distance between the molar teeth is seven-eighths,

Fig. 3.



between the central incisors three-eighths, and between the left lateral incisors, five-eighths of an inch; the small distance between the incisors being partly due to the one-sidedness of the movement, and partly to irregularity of the teeth. The amount of lateral movement is more than might have been anticipated, and the new joint gives no inconvenience. The amount of anesthesia, consequent upon the division of the nerve, is very small, only extending close around the incision, where he has an occasional numbing pain.

The boy has continued in the most satisfactory condition up to the present time, and there would appear now to be no further possible danger of contraction, since the parts where the joint was formed were healthy, and the diseased contractions have in no way been interfered with. That a false joint in the jaw is not a matter of any considerable inconvenience is proved by a case which has lately been under my care, viz., a soldier who was struck, two years ago, on the right angle of the jaw by a bullet, which fractured it, and gave rise to necrosis. The man continued in the army until a few months back, and was able to take his proper food without difficulty, although a false joint had formed at the seat of injury.

The second case of closure of the jaws, to which I have alluded, came under my colleague Mr. Barnard Holt's care, within a few

days of the admission of my own; and that gentleman, after witnessing the results of Esmarch's operation in the former case, adopted the plan proposed, and successfully carried out, by Mr. Clendon, dental surgeon to the Westminster Hospital, in a case under the care of the late Mr. Benjamin Phillips, and also in another in his own practice, viz., to divide the cicatrices freely within the mouth, separating the cheek freely from the jaws, and then employ mechanical means to prevent the reformation of the contractions.

The details of the case, and its treatment, will be best learnt from the following notes of the case; but I may say at once, that the results attained far exceeded my expectations, and that both Mr. Holt and Mr. Clendon may be congratulated on the exceedingly favourable result produced.

The only drawback to this mode of treatment, and one with regard to which it contrasts unfavourably with Esmarch's proceeding, is the amount of pain which the patient must, of necessity, undergo during the after-treatment. It requires no small amount of courage on the part of the patient, and some determination on the part of the attendant, to carry out the necessary manipulations within the mouth, more particularly during the first few days after the operation; and even after the shields are fitted to the mouth, they cause some pain and inconvenience, which only those who have arrived at years of discretion will submit to. The following notes of the case were kindly placed at my disposal by Mr. Holt:—

Frances H., aged 17, was admitted into the Westminster Hospital, under the care of Mr. Holt, 3rd of July, 1862, suffering from closure of the jaws.

In 1857 the patient had fever, attended with an abscess in the cheek on the right side, which led to such contraction and adhesion of the mucous membrane to the jaw as to cause great difficulty in opening the mouth. This difficulty continued to increase; and attempts were made, by direction of the surgeon under whose care she was, to force open the mouth with a spoon, frequently used, but to no purpose. Early in March, 1859, she had scarlet fever, very slightly; and in August, 1859, she was sent to the Kent and Canterbury Hospital, where several of her teeth were extracted, and an iron screw was used to force open the mouth, but without permanent benefit. On the 29th November, 1860, she was admitted into the Westminster Hospital, when Mr. Holt divided the bands of cicatrix within the cheek freely, and, by careful

dressing she obtained some power over the jaw, and was discharged in January, 1861.

On the 3rd July, 1862, she was again admitted into the Westminster Hospital, in the following condition:—

The mouth is contracted on the right side, but not sufficiently to prevent the lips from opening to expose the front teeth. The jaws are firmly closed, the upper incisors overlapping the lower in the ordinary way, leaving a space of one-sixteenth of an inch between them, through which food is introduced. The right cheek is very dense and rigid, and there is a considerable depression in it. The finger cannot be introduced beyond the canine teeth, owing to the firm adhesions of the cheek to the gums, while on the left side the mucous membrane of the cheek is free and healthy. The patient's general health is good, as she takes sufficient food, although slowly.

*Operation*, 23rd July, 1862.—The patient having been placed under chloroform, Mr. Holt divided the cicatrices freely within the mouth, separating the cheek from the upper and lower jaws, until the fingers reached well back to the ramus of the jaw. When this had been effected the jaw still remained fixed, and it was found that the teeth of the lower jaw, from the bicuspid backwards, had been thrust inwards, and that from the outer margin of the alveolus in this region, a firm plate of bone extended to the alveolus of the upper jaw, and effectually prevented any movement. With a narrow saw introduced into the mouth Mr. Holt succeeded in dividing this, and the mouth could then be opened; after which the remains of the ridge were removed with the bone forceps. The cheek was stuffed with oiled lint, to prevent the recurrence of the adhesions, and the patient was put to bed.

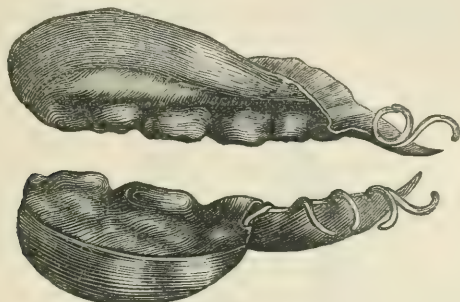
25th July.—There was considerable swelling of the face; the lint was removed, and the finger passed freely in every direction, after which the lint was replaced.

28th July.—The swelling of the face having somewhat subsided, Mr. Clendon took wax and gutta percha impressions of the mouth, under chloroform, in order to form the shields to be attached to the teeth, and inserted between the cheek and gums.

30th July.—The shields (Fig. 4) were fitted. They consist of a horizontal portion, fitting upon the molar teeth, and fastened with bands to the canine and incisor teeth, and a vertical portion which passes by the side of the alveolus to the bottom of the sulcus, between it and the cheek. The edge of this is quite thin, and

serves to cut a groove in the adhesions, which are already beginning to fill up the space.

Fig. 4.



7th August.—The shields keep thoroughly in their places; but as the cheek is still raw, wet lint is inserted between the gums and the lining of the cheek, and the finger is daily passed freely beneath the cheek, to the full extent of the teeth. Two wedges of wood were fitted to the mouth, one on each side, so as to maintain the constant separation of the jaws.

15th August.—Condition of the mouth is every way satisfactory; the gums and cheek are beginning to be covered with mucous membrane, and the discharge is slight. A band in the middle of the cheek having become rather tense and prominent was freely cauterized with nitrate of silver.

1st September.—The shields and wedges are worn without any discomfort, and the girl can open her mouth most satisfactorily. The shields effectually prevent adhesions forming between the gum and the cheek.

From this time the patient's progress was uninterrupted; she recovered perfect use of her jaw and mouth, and all tendency to recontraction seemed to have disappeared; she was kept under observation at the hospital many weeks longer than was absolutely necessary for the further carrying out of the treatment, with the view of testing the permanence of the cure; and was finally sent to the country 1st November, 1862, with the shields still in the mouth, and still wearing one of the wedges, which she had become quite accustomed to.

She returned to the hospital for a few days, in December, that the progress might be noted, and the accompanying portrait (Fig. 5, from a photograph) was then taken, for the sake of comparison with that showing the result of Esmarch's operation. The shields

were removed for five days, in order to be sketched, and no apparent change resulted from their non-use; but, for safety's sake, she is to continue wearing them for the present. The distance between the incisor teeth, when the mouth is wide open, is three-quarters of an inch.

Fig. 5.



The effect of the use of the shields seems to have been, not merely to prevent adhesions between the inside of the cheek and the alveolus, but to re-establish, to a great extent, the sulcus of mucous membrane at the base of the alveolus, upon which so much stress is laid by Professor Esmarch. Surgical experience in cases of ruptured perineum, &c., shows how soon mucous membrane is reproduced where it has once existed, or even appears on adjacent parts when its presence gives rise to inconvenience; and there can be no question, that in this case the mucous lining of the cheek has been reproduced to a great extent, and particularly near the lower alveolus. Esmarch's theory, that there must be some portion of old mucous membrane remaining which afterwards becomes stretched is certainly untenable as regards this case at least, for, without doubt, the whole lining of the cheek and the outside of the alveoli were perfectly raw, owing to the division of the firm cicatrices.

The cause of non-success in former attempts at mechanical appliances is to be found, I think, in the fact that they have all been directed simply to keeping the jaws apart, without any reference to the re-establishment of the mucous lining of the cheek, upon which, as Professor Esmarch says, the movements of the jaw

so much depend. That the success in this case depended upon this fact is proved, I think, by the existence of a firm band in the cheek which would effectually control all movement were its extremities attached to the two alveoli; but as it is, it gives no inconvenience, and will, in all probability, atrophy in the course of time.

Since the above was written I have had another case under my care, of even a more serious character than either of the preceding, owing to the fact that contractions of a most severe nature existed on *both* sides of the jaw, reaching to the angles of the mouth, which was contracted and firmly bound down to the alveoli in consequence. In this case Esmarch's proceeding was manifestly inadmissible, for a section of the jaw must, of necessity, have been made in two places to be of any benefit, and the resulting central portion of bone would have been entirely uncontrolled by the muscles of mastication. I, therefore, in December, divided freely all the cicatrix tissue on both sides of the mouth, severing, as far as possible, all connexions between the inside of the cheek and the alveoli, and opened the mouth sufficiently to convince myself that no bone had been developed between the jaws.

Mr. Clendon subsequently adapted two entire shields to the alveoli, which were modified, from time to time, as the case advanced; and the results obtained, to the present date, are most satisfactory, as will be seen by the following detailed history of the case from my hospital case-book:—

Isabella M'N., aged 18, admitted into Arden Ward, 15th Dec., 1862, under Mr. Heath, with closure of the jaws and mouth from cicatrices.

*History.*—When five years old she had measles (?), and is supposed to have taken mercury; and, a few months after, it was noticed that the cheek was contracting, so that when six years old the jaws were firmly closed. When about seven, she was admitted into the Dundee Infirmary, and some operation was performed, by which she was benefited for a short time, but the jaws were soon as firmly closed as before. When about 11 years old, she was admitted into the London Hospital, under Mr. Luke, who divided the cicatrices, and opened the jaws with a screw. She was in the hospital three months, and was slightly benefited for a time. Eighteen months after she was again admitted, and the same operation was repeated, oiled lint being introduced beneath the

cheeks, and wedges inserted between the teeth to keep them apart. The parents took considerable pains to keep the wedges in, and to make her move her jaws; but the contractions soon recurred, and for the last two years and a-half the jaws have been firmly closed.

*Present condition.*—The mouth is smaller than usual, owing to contractions at the angles, but she can show the incisor teeth, and the upper ones are seen to be firmly closed over the lower. The cheeks are firmly bound down to the alveoli from the angles of the mouth, and there is no power of separating the jaws at all; but she can move the lower jaw a little from side to side. She introduces her food through an aperture on the right side of the incisor teeth, where a tooth has been lost. She is plump and well nourished, but has not menstruated for five months.

*Operation.*—Dec. 16th.—The patient, having been put under chloroform, Mr. Heath proceeded to dissect up the cheek from the alveoli, by passing a knife from the mouth. The bands of cicatrix were exceedingly firm, and were found to pass not only between the gum and the cheek, but between the gums themselves; and these required free division before the mouth could be opened at all, and then only by the help of a screw. During the operation a small wedge of wood was extracted from between the teeth, where it had been for some months. Oiled lint was carefully stuffed between the alveoli and the cheek, and the patient put to bed, and given twenty minims of tincture of opium.

Dec. 18th.—The pledgets of oiled lint were removed, and the mouth well washed out. She can open the mouth for a short distance, but the movements are necessarily painful. Lint, soaked in myrrh lotion, was placed inside the cheek.

Dec. 20th.—Chloroform having been again administered, Mr. Clendon attempted to take models of the mouth, but found that the aperture was so small, and the space between the teeth so contracted, that it was almost impossible to obtain a satisfactory mould. The teeth appear to have been only partially developed, with the exception of the incisors, which also are so loose as to offer little support to a shield.

Dec. 22nd.—Mr. Clendon took moulds of gutta percha of the outer surface of the jaws, as some guide for the formation of temporary shields.

Dec. 25th.—The house surgeon was called up last night to the patient, who was bleeding freely from the left side of the mouth. He plugged the cheek with fresh lint, which arrested the hemorrhage.

A second hemorrhage occurred in the afternoon, and the blood came from quite the back of the mouth, between the cheek and alveolus, on the left side. Mr. Beadles (H. S.), finding that a coagulum had formed, which had stopped the hemorrhage, left it undisturbed.

Dec. 26th.—Mr. Heath saw the patient, who was rather reduced by the bleedings, but thought it better not to disturb the clots for another day. Ordered eight ounces of wine and beef tea.

Dec. 27th.—A severe arterial hemorrhage occurred this morning, and was arrested by clearing out all clots, and syringing the mouth with cold water. Twelve ounces of wine, beef tea, eggs.

Dec. 29th.—No more hemorrhage has occurred, but the patient has become somewhat anemic. Mr. Heath thought it would be safer to postpone any further interference with the case for a week, so as to allow her to recover fully from the loss of blood. The mouth to be simply syringed out with warm water and myrrh lotion.

5th Jan., 1863.—The patient having been put under the influence of chloroform, Mr. Heath carried his finger freely between the cheeks and the alveoli, breaking down the soft adhesions which had begun to form. Mr. Clendon then removed some stumps of teeth and all the incisor teeth (except one of the upper centrals), which were loose; and then succeeded in taking more satisfactory moulds of gutta percha, from which the shields might be made.

7th Jan.—Under chloroform, silver shields were fitted upon the alveoli, the edges of which passed between the alveolus and cheek. Blocks of gutta percha were wedged between them, to keep the jaws apart.

10th Jan.—Fresh shields, with deeper sides, were inserted, under chloroform. The remaining incisor tooth came away, and several stumps were removed.

14th Jan.—Bone wedges were fastened on to the shields to keep the jaws apart, and to permit of greater cleanliness than was possible with the gutta percha. To use a lotion of chlorinated soda frequently.

21st Jan.—Under chloroform, Mr. Heath made a thorough examination of the mouth, and found everything in a satisfactory condition so far. The sulcus on each side of the mouth has considerably increased in depth, and the finger can be carried between the gum and cheek, as far back as the wisdom teeth, on each side. The mouth is kept well open by the bone wedges, and the absence

of incisor teeth gives plenty of room for the introduction of food. Mr. Clendon extracted several stumps, and then took fresh moulds of the mouth. The old shields and bone blocks were then re-inserted.

28th Jan.—Under chloroform, the shields were removed, and having been relined with soft gutta percha, were replaced. The mouth opens very satisfactorily, and the soreness is diminishing.

4th Feb.—Under chloroform, fresh shields, with deeper edges, were introduced, which kept the mouth widely open.

12th Feb.—Some little swelling about the right eye has come on during the last day or two, but is gradually subsiding under fomentations.

28th Feb.—The patient is able to move the jaw to a slight extent, even with the shields in the mouth, and the case seems to be going on satisfactorily.

28th Feb.—The shields were removed, under chloroform, having been *in situ* three weeks, and were lined with some fresh gutta percha, so as to fit more accurately to the alveoli. The mouth has increased in size, and the sulci on each side of the alveoli are much deepened.

11th March.—The shields were removed, under chloroform, and the bone blocks cut off, their places being supplied by movable wedges of hard gutta percha, so as to permit the patient's removing them when eating, and thus to exercise the jaws. The granulations in each cheek were touched with nitrate of silver.

25th March.—Under chloroform, the adhesions between the lips and the alveoli were divided by Mr. Heath, and fresh silver shields were then fitted, the edges of which were purposely made deeper in front, so as to free the lips from subsequent contractions.

On the 2nd April I took a careful measurement of the extent to which the jaws could be separated, and found that there was a distance of exactly one inch between the metal shields, in the situation of the incisor teeth. As the shields have some gutta percha beneath them, and do not, therefore, fit closely upon the gums, it will not be necessary to allow much more than a quarter of an inch for the absent teeth, making the present aperture considerably over half an inch, if the teeth were *in situ*. This must be allowed to be a very satisfactory result so far; and the distance will probably be increased, as the patient has been supplied with beech-wood wedges, which she introduces and wears, between her meals. When the mouth is widely opened the lining of the cheeks can be seen between

the shields, and it is already assuming something of the appearance of mucous membrane. The mobility of the lips, and hence the size of the mouth, have increased considerably since the last operation; and, as far as I can see, this case promises to be as successful as the preceding one.

It has thus been shown that cases of closure of the jaws by cicatrices are amenable to two modes of treatment, and with most satisfactory results; and having had personal experience in carrying out both methods, I shall venture to draw a brief comparison between them.

Esmarch's operation is a comparatively easy proceeding; and, in cases where only *one* side of the jaw is affected, restores the patient a very useful, though one-sided, amount of masticatory power in two or three weeks, and with very little suffering or annoyance. One side of the jaw is, however, rendered permanently useless (its previous condition), and there is a necessarily resulting deformity which is not, however, of a very distressing character. The paralysis, from the division of the nerve, is so slight as not to be worthy of mention.

The treatment by internal division, and the use of metal shields is applicable to *all* cases, and can, with due care and attention, be made to yield most satisfactory results—the patient enjoying the full use of both sides of the jaw, and having no deformity nor loss of sensation. On the other hand the operation itself is difficult and bloody, and the after-treatment is tedious and troublesome; and it is essential for success to have the coöperation of a dental practitioner, fully conversant with the frequent modifications which the metal shields must necessarily undergo. The age of the patient is an important element also, since it would be impossible, I imagine, to carry out the treatment with any hope of success, unless the patient were of an age to assist, or at least not to resist, the surgeon. In my own case chloroform was resorted to on every occasion of real operative interference, but the intermediate treatment was much hindered by the timid character of the patient.

In conclusion I would suggest the propriety and feasibility of attempting to *prevent* the formation of these serious contractions by the introduction of metallic shields, of the character I have described, in cases of “*cancerum oris*,” &c. Unfortunately these destructive disorders occur, for the most part, among children of tender years, in whom it might be dangerous to keep up constant irritation by the presence of a foreign body in the mouth; still, at

three or four years of age, it would be quite worth while to try the effect of metal shields carefully and securely fastened in *before* the contraction of the cicatrices had taken place, the appliances being changed under chloroform as often as might be necessary.

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ART. XII.—*On the More Rare Nervous Diseases of Children.* By W. J. COX, Medical Officer, Sodbury Union, Gloucestershire.

HAVING ample field for their study, the convulsive maladies of childhood have occupied much of my attention for some years. I now offer outlines of some cases of the less frequent forms of this class of diseased action, with brief remarks, which I trust may be deemed worthy perusal.

#### SALAAM CONVULSION.

CASE.—In March, 1858, I was summoned to see E. F., a boy nearly three years of age, well nourished, and apparently healthy. His father was subject to occasional epileptic seizures. The mother, who called me, said that the child having been somewhat out of health for some days previously, dull and peevish, had that morning been seized, immediately after awaking from a disturbed and moaning sleep, with a fit of violent nodding of the head, accompanied at intervals by loud screaming. By the time I reached the scene the screaming had ceased, but the bowing continued. The head was projected forwards and downwards, with great force and frequency, the convulsive movements averaging 40 in a minute. Sometimes a rest of five or six minutes occurred, and then the salaams were renewed as before. At every seventh, eighth, or ninth bow a more powerful automatic movement brought the head of the little sufferer almost to his thighs. There was no strabismus, nor heat of scalp, fever, or vomiting, but the pulse was 168. The motions ceased gradually after an hour and a half's duration. The next morning they were renewed with greater violence, and went on increasing (but never occurring more than once during the 24 hours) for 18 days, when they issued in two attacks of general convulsions, after which a perfect recovery took place.

*Treatment.*—Calomel and rhubarb; iodide of potassium; steel; hydrocyanic acid; the warm bath; chloroform, administered internally (in the form of the so-called chloric ether). I could not perceive that a favourable impression was made on the disease by any of

these remedies, excepting the last, which, unfortunately, was not exhibited until two days before the general convulsions occurred. After these seizures the bowing fits speedily declined, both in force and frequency.

Mr. Newnham, who has written ably on this extraordinary affection, considers it of spinal origin and allied to epilepsy. I quite coincide in these opinions. In the case above given, the epileptic taint derived from the male parent, the peculiar character of the attack, its issue in general convulsions, and the impression made on it by the exhibition of chloroform, seemed to indicate its origin in the medulla oblongata. I may mention, as corroborative evidence, that in a case given in the *Journal für Kinderkrankheiten*, April, 1850, the patient became a confirmed epileptic; and that two cases, mentioned by Dr. Churchill, terminated, one in epilepsy, and the other in idiocy.

#### TRISMUS NACENTIIUM.

CASE.—Whilst residing in Lancashire, seven years since, I saw a poor infant labouring under this very rare and remarkable malady; it was 10 days old, and was the illegitimate offspring of a scrofulous factory girl of 17 years. As a matter of course, under such circumstances, it was fed on artificial food, narcotized, and horribly neglected. The place where its old nurse lived (who also tended four more innocents) was a damp wretched hovel, offensive to every sense. The symptoms were tetanoid, rigid spasms of the temporal and masseter muscles, rapidly extending to the neck and chest. No treatment was put in force, excepting a warm bath, and the poor infant died on the next day, before the rigidity had involved the whole body. Permission to make an autopsy was obtained with some difficulty; nothing abnormal was discovered in the brain or cervical portion of the spinal cord; nor had there been inflammation of the umbilical vessels, which are the lesions generally associated with the disease by authors on the subject. The intestinal canal, however, was deficient in its proper secretion, destitute of bile, and, towards its lower extremity, contained a scybalous mass, black and inodorous.

#### SPASM OF GLOTTIS.

CASE.—It is now 10 years since I brought this subject under the notice of my professional brethren, more particularly with relation to the treatment of the malady by the inhalation of chloroform,

and the internal use of hydrocyanic acid. Dr. Churchill, in his admirable work on the *Diseases of Children*,<sup>a</sup> has done me the honour to mention my advocacy of these remedial agents. Since that time I have, with some success, associated with them the *internal* administration of chloroform. I am accustomed always to use the chloroform diluted with an equal bulk of alcohol, for the purpose of *inhalation*, and to prescribe chloric ether as its best and safest form for *internal* use. My views, then, with respect to the pathology and treatment of this malady are generally in accordance with those of Dr. Hugh Ley, long since published, so far as they extend; but, in addition to these, my own observations emboldened me to offer with confidence the following propositions:—

1. That irritation of the fifth pair of nerves is the *most* frequent of *all* existing causes of the disease.

2. That, after all *local* sources of irritation have been removed, there often persists an undue *centric* irritability of the spinal cord, prolonging the symptoms; especially if the attacks have been severe and frequent before treatment.

3. That the malady is remotely allied with epilepsy; and that an analogy is traceable between it and the epileptoid seizures of a later period of life.

4. That chloroform is often of remarkable efficacy in cutting short the length, and also lessening the frequency and severity of the paroxysms (inhaled).

5. That to fulfil the indications presented by proposition 2 the *internal* exhibition of chloroform, hydrocyanic acid, and the preparations of iron, is the most successful line of treatment.

I shall now proceed with a brief detail of cases.

CASE I.—Male, aged 11 months, of strumous diathesis. First paroxysm cut short by dashing water in the face; the second yielded only to chloroform. Cod-liver oil, and hydrocyanic acid, for four weeks, completed the recovery.

CASE II.—Female, aged two years; scrofulous; had had seven or eight violent attacks. Found her almost in a state of coma, respiration all but suspended. The warm bath had been already vainly tried. The inhalation speedily gave relief; and an interval of three days occurred before the next attack. Citrate of iron was then given, perseveringly, for the period of 10 weeks, with

<sup>a</sup> Second Edition, pp. 239, 240.

hydrocyanic acid (one third of a minim Scheele's strength, three times a-day). A perfect cure resulted.

CASE III.—A strumous girl, three years old. About two months previously she had received an injury, from a fall, over the dorsal portion of the spine, ever since which she had suffered from attacks of laryngeal spasm; at first at intervals of two or three days, but gradually increasing in frequency. No relief was obtained from treatment, and the case ended fatally, 12 weeks from its commencement. A *post mortem* was made with the results following:—The larynx, bronchi, and lungs were perfectly sound; but on opening the vertebral canal, at the upper part, the cause of the fatal seizures was plainly apparent. The dura mater of the cord was extremely vascular; and a thin layer of pus was spread over its surface, on a space extending from the foramen magnum to the fifth cervical vertebra; the arachnoid membrane was also, for the same distance, thickened and opaque. These morbid appearances did not correspond with the situation of the bruise received from the fall, which was considerably lower down the spinal column.

CASE IV.—Female, aged 18 months. Father epileptic. In this case, I am convinced that but for the inhalation of chloroform death would have resulted. The attack continued, at intervals, for two years; but regulation of diet and the use of hydrocyanic acid at last effected a cure.

CASE V.—Male, aged 21 months. Mother subject to fits. Had suffered much from teething, which was always attended with more or less crowing. The chloroform was repeatedly inhaled with great advantage. The gums lanced, and the acid administered. The result was most favourable.

CASE VI.—A boy, four and a-half years of age, of unhealthy aspect, and emaciated frame. The paroxysms of laryngismus were very frequent and severe. In addition there were also present dysphagia and alteration of the voice, with occasional fits of syncope, unaccompanied with difficulty of breathing. During such attacks the face was deathly pallid, and the extremities cold; the pulse was generally feeble and indistinct. No treatment much availed, although the exhibition of iron seemed to benefit for a brief time. He died before completing his fifth year. Having obtained leave

to open the body, I discovered a lesion very unusual in so young a subject, viz, an aortic aneurism involving the recurrent nerve.

CASE VII.—Male, aged two and a-half years. Had three or four severe attacks previously to my seeing him; the last nearly proving fatal. Chloroform was used in this case, both in inhalation and medicine, and with speedy success. Four months' treatment sufficed for a perfect cure.

CASE VIII.—Female, aged two years. Mother and mother's brother subject to (epileptic?) fits. This child was stout, and, apparently, robust. The attacks were uncommonly severe, threatening immediate death. Chloroform was inhaled with great advantage, and afterwards given internally, with iodine and iron. The child gradually recovered, and is now a fine strong girl.

CASE IX.—A boy, aged 18 months. The paroxysms in this case were of very long duration, but not of extreme severity. A brother of the child had previously died in convulsions. The appearance of ascarides indicated iron and purgatives, which did great service; but the attack, although much lessened, did not cease. The internal use of chloroform soon effected a cure. In this case no inhalation was thought necessary.

CASE X.—Male, aged 10 months; stout and plethoric. Great dental irritation. No persuasions could induce the parents to allow lancing the gums, which ought certainly to have been done. Purgatives were freely given, and afterwards chloroform in a mixture. The seizures soon greatly abated both in force and frequency. The parents removed to a distance shortly afterwards, and I lost sight of the case. I have since heard that the child died in convulsions, at the age of two years.

CASE XI.—A girl of two years of age, was suddenly seized with a violent fit of the crowing inspiration in the night. The mother, a very intelligent person, sprinkled water on the child's face, and applied the warm bath. These means proving successful, medical aid was not then sought. But, a fortnight afterwards, a still more severe paroxysm occurred in the day time, whilst the child was playing with its elder sister. I was then summoned. Chloroform having been inhaled, and a purgative given, no further attack took

place for three months, when the malady was renewed with increased violence. The seizures now took place twice or thrice daily. Strangury and tetanoid spasm of the sphincter ani also was observed at intervals, showing the reflex action of the spinal nerves. Chloroform and steel was now given, internally, and with astonishing success. The seizures entirely ceased in three weeks, and never afterwards recurred.

CASE XII.—A female, aged 18 months. This child had a drunken parent, and was very ill-nourished. She had also swelled cervical glands and strumous eczema of the scalp. The attacks of crowing were very frequent, but not of great severity. The gums were swollen and tender, and three teeth only had come through. I lanced the gums, gave iron and chloroform in combination,<sup>a</sup> and applied dilute ointment of nitrate of mercury to the scalp. Improvement was rapid and permanent. The eruption was cured in five weeks, whilst the laryngeal spasms had greatly diminished. A steady perseverance in the use of the medicine, and a generous nourishing diet, completed the cure.

CASE XIII.—A male, aged only nine months. The crowing fits were not very violent, but extremely frequent. Indeed the child's breathing was, for the most part, laborious and noisy. As this case did not seem to call for alteratives or tonics, there being but very slight disturbance of the general health, chloroform alone was given in syrup, and with marked benefit; although the child continued to be affected with the spasm, at irregular intervals, until it had completed its second year.

CASE XIV.—A female, aged 14 months. This child had been brought up on artificial food, and was, moreover, scrofulous and wan. The diet was carefully regulated, and cod-liver oil tried, at the expressed wish of the friends. This being rejected as soon as swallowed, hydrocyanic acid was then given, and afterwards chloroform and steel. The general health rapidly improved, and the laryngismus declined in the frequency of its attacks. It continued to recur, however, at intervals, for a period of 9 or 10 months, when it finally ceased.

<sup>a</sup> My favourite formula is as follows:—Tincture of perchloride of iron, of chloric ether, each one drachm; water four ounces; mix. Dose: a dessert spoonful for a child three years of age.

CASE XV.—A female, a year old. Most violent and frequent attacks. Lancing the gums put a stop to them at once; and four or five months elapsed before they recurred. Chloroform was then prescribed, with steel, which was persevered in, the child being anemic, for nine months. The fits soon ceased, and returned no more.

CASE XVI.—A boy, 14 months of age. Enjoyed perfect health until about a year old, when he had an attack of general convulsions, followed by strabismus and partial paralysis. Laryngeal spasm, of intense severity, supervened, almost immediately, which defied all treatment. A slight amelioration, of a few days duration, was terminated by another convulsive seizure, which carried him off in less than an hour.

CASE XVII.—A fine boy,  $6\frac{1}{2}$  years of age. This child (the *oldest* subject of laryngismus I ever saw) was first attacked with paraplegia, being quite unable to move his lower limbs for three weeks. The source of this being detected, viz., intestinal worms, purgatives and iron were, of course, prescribed. Whilst under treatment, laryngeal spasm came on each night, and did not entirely cease until the boy had regained the use of his limbs. The purgatives being withdrawn, a small dose of chloroform was added to the iron; and a perfect cure was the result, in less than a month.

#### CEREBRAL IRRITATION.

This condition, called by the late Marshall Hall, “hydrencephaloid disease,” and most ably described by him, and also by Dr. Churchill, is certainly, from its marked and insidious character, and its fatality when misunderstood or neglected, well worthy our most attentive study. The two following cases will illustrate these views:—

CASE I.—A female child, 14 months of age, to whom I was summoned, presented the following appearance:—Flushed face, hot skin, pulse 140, white tongue. The infant was restless, peevish, intolerant of light and motion. She lay in a kind of disturbed sleep, for the most part, moaning almost constantly, and occasionally screaming, as if from alarm. The bowels were very relaxed, and the evacuations watery and somewhat greenish. There was no vomiting. The eyes were dull, and the pupils dilated. The

parents, who had been reading some popular medical book, thought it a case of water on the brain, and were most anxious for me to order leeches, &c. Upon inquiry, I learnt that the child had been recently weaned; and that all the bad symptoms had come on since the change of food. The child had had no acute disease of any kind. I had some difficulty in inducing the friends to adopt my theory of the real nature of the malady. The treatment consisted in giving support, by means of nourishing diet (veal broth—which I prefer to beef tea for infants—milk, &c.); and the administration of ammonia, combined with small doses of opium, until the condition of the pupil altered; when the opium was withdrawn, and the ammonia continued with citrate of iron. Recovery was speedy and permanent.

CASE II.—A little boy, between three and four years of age, who had just recovered from a severe attack of measles, complicated with broncho-pneumonia. When called to the child, I was told that the “fever in his chest had flown to his head the day previously, and that he now had effusion on the brain.” I found him lying in a half-stupor, pale, and cold, moaning and sighing at intervals. The eyes were half closed and the pupils dilated, and almost insensible to the stimulus of light. There was some restlessness, jactitation, and sickness. The pulse was very feeble and frequent, and it was evident that death, by asthenia, would soon occur if the tendency thereto was not arrested. The diagnosis in this case did not present so much difficulty as in Case I. The history of the little patient’s previous exhausting disease, and the facts elicited by questioning the parents as regards the child’s state two days before, indicated, I thought pretty clearly, that the condition in which he was when I was called had been *preceded* by a stage of excitement similar to that described as characterizing the state of the patient in Case I. The treatment, which was quite successful, consisted in the application of sinapisms to the feet, in order to overcome the disposition to coma; the plentiful administration of nourishment, as soon as the child was sufficiently roused; and the exhibition of tonics, combined with diffusible stimulants.

#### PARALYSIS.

A little boy, nearly two years of age, who had previously suffered much from painful dentition, requiring lancing of the gums and alterative medicines, became suddenly lame of the right lower

extremity, which was found one morning to be quite powerless and insensible. On examining the mouth, the gums, over two molars which were not yet through, were found hot and tender. These were freely incised, a purgative given, and the child placed in a warm bath. The power of motion, however, did not return in the paralysed limb, although sensibility was partially restored. Stimulating embrocations were then ordered, and a strict watch kept on the general health. At the expiration of six months (up to this date) there is but little improvement. The child is still unable to walk, and the affected limb is beginning to shrink, and its temperature is lower than that of its sound fellow.

Another case, which was placed under my care about three years since, presented some interesting features. The patient was a little girl, four years of age, of scrofulous diathesis, but generally healthy and intelligent. She had always suffered from headache, but up to within a very short period of my seeing her, had no acute disease of any kind. Lately she had three attacks of vomiting, without any manifest exciting cause; not preceded by nausea, and occurring on first awaking from sleep. She complained, during the intervals of these attacks, of giddiness, dimness of sight, and more violent headache than usual. At last, one morning, she was found to be completely paralysed in the right leg and arm, which were rigid and insensible. The child now seemed dull and apathetic, making no complaint, taking food and drink with avidity, but making no improvement. She remained in this state, with no mitigation of the paralysis, but improving in general appearance, and, indeed, getting fat, for more than four months, when she was suddenly seized with general convulsions, which rapidly subsided into coma, of which she died in 30 hours. The parents were no less anxious than myself for a *post mortem*. On opening the skull, the source of the symptoms soon was revealed: a tumour, consisting of an aggregation of masses of tubercle (nine in number), was found imbedded in the *pons varolii*. There was effusion of serum in the fourth ventricle, which was probably the immediate cause of death. I confess that in this obscure case, the symptoms had not guided me during life to a correct diagnosis. I may mention, that the irregularity of the pulse, spoken of by Dr. Charles Johnson<sup>a</sup> as being generally diagnostic of tumours of the brain (in the absence of lesions of the heart and great vessels), was not present in this case, from first to last.

<sup>a</sup> Churchill's Diseases of Children, p. 193.

I have notes of another interesting case, which I saw for a medical friend last year, of paraplegia, in a boy six years old, which terminated fatally—the autopsy showing a large calculus blocking up the pelvis of the right kidney.

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ART XIII.—*Practical Observations on the Injurious Effects of Chloroform Inhalation during Labour.* By ROBERT JOHNS, A.B., M.B., T.C.D.; Licentiate of the King and Queen's College of Physicians, Ireland; Licentiate and Fellow of the Royal College of Surgeons in Ireland; Member of Council of the Surgical Society of Ireland; Member of the Royal Zoological Society of Ireland; ex-Assistant-Master of the Dublin Lying-in-Hospital; late Consulting Accoucheur to Saint Peter's Parochial Dispensary; Honorary Member and Honorary Vice-President of the Dublin Obstetrical Society; Chairman of the Midwifery Court, and Examiner in Diseases of Women and Children, Royal College of Surgeons in Ireland; Consulting Accoucheur to the Coombe and Maternity Hospitals, &c., &c., &c.

As, at the present time, the subject of chloroform inhalation is again *sub judice*, I feel it incumbent upon me to raise my voice against its employment in midwifery, and to lay before my professional brethren my reasons for the adoption of such a course, which I sincerely trust shall have some weight with the unprejudiced, and which may, perchance, call the more serious attention of some, if not of all, of those now too deeply wedded to its use, to the dangerous, and too often fatal, results consequent thereon, in which, if I but even partially succeed, I shall consider myself well repaid.

From experience, repeated observation, and the published, as also the otherwise expressed opinions of those who agree, as well as of those who disagree with me upon the subject, I am firmly convinced that chloroform, when inhaled during labour, very fruitfully predisposes to hemorrhage, puerperal inflammation, chest affections, and to other diseases detrimental to health and life, which it aggravates if given during their presence. It also lays the foundation of diseases to arise at a more distant period, and thus increases the mortality in childbed and subsequent thereto. I have known puerperal inflammation frequently to have followed its inhalation, and too often with a fatal result; in fact, some years since, when it was more

fashionable, and was given with a more lavish hand, a great mortality obtained amongst the patients of some few men who administered it—so much so that a popular outcry was raised against its employment. In the majority of those cases puerperal fever was the cause of death, which, when thus raised, being, as I firmly believe, always infectious or otherwise communicable, became epidemicized, after which even those who wisely refused the drug, “charmed it never so sweetly,” were thus inadvertently, and, in some instances, hopelessly poisoned.

In support of these positions, I shall first refer to the several published Reports of the Dublin Lying-in-Hospital. We find, on reference thereto, that during the masterships of Drs. Collins and Johnson,<sup>a</sup> when chloroform was not inhaled, that the mortality was much less than during that of Dr. Shekleton,<sup>b</sup> when this “pernicious drug was used”—as thus:—In the first report are recorded 16,414 deliveries and 164 deaths, or 1 in 100; in the second, 6,634 deliveries and 65 deaths, or 1 in 102; whereas in the third, 13,748 deliveries are given, and 163 deaths, or 1 in 84!! But of these last 13,406 cases were not chloroformed, of which only 133 died, or 1 in 100; and of the remaining 342, who took the drug, 30 died, or 1 in 11!!! If, again, we examine the reported cases of chloroform administration by Simpson and Denham, we shall find that of 245 cases mentioned by the former, 5 died, or 1 in 49; and of 56 by the latter, 5 died, or 1 in 11!! And, by adding all these recorded cases together, we have a mortality on the whole of 1 in 16!!! By again consulting those reports, we perceive that in Dr. Collins’ mastership there occurred 97 cases of post partum inflammation, or 1 in 169; in Dr. Johnson’s 62 cases, or 1 in 107; but in Dr. Shekleton’s 150 cases, or 1 in 91. Of those 150 cases, 20 followed upon chloroform inhalation, or 1 in 17!!! and in the remaining 130 cases, in which it was not employed, the average mortality was only 1 in 103. In Denham’s report we find 4 cases, or 1 in 14; which, with all the recorded cases, strikes an average of 1 in 16½!!!

We also find that, during Dr. Collins’ mastership, puerperal convulsions proved fatal in the proportion of 1 in 6; whereas in that of Dr. Shekleton, when under chloroform, it amounted to 1 in 3!! and in Denham’s cases to 2 in 3!!! or, on the whole, to 1 in 2½!!!

It appears that, during Dr. Shekleton’s tenure of office, post partum

<sup>a</sup> By Drs. Hardy and M’Clintock.

<sup>b</sup> By Drs. Sinclair and Johnston.

hemorrhage occurred but once in every 257 cases when chloroform was not used; yet after its inhalation this complication was present in 1 of every 49 cases. In Dr. Denham's report it was present in 1 of every 19 cases; making, on the whole, an average occurrence of 1 in every  $39\frac{4}{5}$  cases.

With respect to the mortality after perforation, the report of Drs. Hardy and McClintock shows 1 fatal case in every 6, and that of Drs. Sinclair and Johnston 1 in every 5; but if we go a little below the surface in the latter report, and examine into 99 cases of perforation, all of equal severity and danger, we shall discover that of the 29 cases in which chloroform was inhaled 9 died, or 1 in  $3\frac{1}{4}$ ; puerperal inflammation occurred 10 times, or 1 in every 3 cases; and hemorrhage followed in 3 cases, or 1 in every 10; whereas, of the 70 cases in which this drug was not employed, only 6 women died, or 1 in every 12; puerperal inflammation arose only in 3 cases, or 1 in every 23; and in no case did hemorrhage occur.

Many have testified to the fact that uterine action has been lessened, and even caused to cease, by anesthetics; as also that their effect on some is not commensurate with the quantity of the drug employed—as thus: a very large amount not having any effect upon some, whereas the inhalation of a very small dose, even of a few drops, has produced almost deep coma in others. Dr. Denham says:—"In some, if left to nature, the labour would probably have been completed in a somewhat shorter space of time. The advantages to be gained by chloroform in some cases will not be found an adequate compensation for the loss of power sustained in the muscles of animal and organic life; and, were we to continue its use, I do believe that the patients would remain undelivered for hours, or even days. The cases that apparently require it most—tedious and difficult labours—are those where it often appears to be injurious, by weakening the pains or relaxing the muscles of animal life." Rigby says:—"We meet with cases, every now and then, where chloroform undoubtedly retards labour, and in some cases likely to call for the use of the forceps."

Dr. Robert Lee mentions cases in which "uterine contractions were arrested, requiring the use of the forceps and perforator."

Tyler Smith "has seen chloroform stop labour midway."

In some of the cases recorded by Sinclair and Johnston uterine action was impaired.

My friend, Dr. Young, of Monaghan, says, in a letter to me:—"I believe chloroform in many instances to delay the labour, by

causing the pains to come at longer intervals, and rendering the expulsive efforts of the patient less efficient, owing to her insensibility to suffering."

Merriman has mentioned a case in which "the uterus was so paralysed that it failed to act afterwards."

Snow says:—"It is true that a full dose would, at any time, suspend uterine action for a few minutes, or as long as it might be kept up."

Ferguson says:—"Chloroform does not destroy muscular action, because, when under its influence, some expel urine and feces." Now, from this, his doctrine must be that it increases muscular action; whereas, I take it that it paralyses the sphincters.

On looking into Drs. Sinclair and Johnston's report, we find "two cases in which version was very difficult; and two others, in which that operation was impossible, where chloroform had been inhaled."

Murphy thus speaks:—"In a case of version, I never experienced so much difficulty in consequence of the strong contractions of the uterine fibres about the child."

Barnes remarks:—"In many cases it does not facilitate the operation of version, the uterus resisting the introduction of the hand."

Puerperal, hysterical, and epileptic convulsions—mania, paralysis and insanity have followed on its use. Cases are recorded by Montgomery, Sinclair and Denham, in which puerperal convulsions occurred after its employment. Sinclair gives two cases of hysterical convulsions, in one of which "violent muscular action was induced; restlessness continued for a considerable time after the inhaler was removed."

Murphy states that, "in dentistry, hysterical women have been seized with fits when under its influence."

Snow asserts that "hysterical patients, as soon as they lose their consciousness from the effects of the vapour, are sometimes attacked with a paroxysm of hysteria."

Dr. R. Lee says:—"Epilepsy has been so induced."

Sinclair records one case of epilepsy.

Snow and M. Fix have stated "that persons subject to epilepsy are likely to have a fit brought on by inhaling chloroform."

Ramsbotham "saw three cases of puerperal mania so caused. A friend of his also saw one similar case."

Sutherland "met three other cases, similarly produced."

Tyler Smith stated "that he had seen mania from its use."

Parks relates the case of a lady who had chloroform in her third labour. "She, after delivery, complained of violent pain in the head, became delirious, tore the nurses gown and the bedclothes into pieces, and was perfectly maniacal."

Mr. Banner thus speaks:—"A patient became delirious, and continued so during the day and greater part of the night, after its use."

Haartman "saw a case of headache terminating in paralysis, caused by this drug."

In one of Dubois' published cases, numbness of the fingers, and in another the same condition of the legs supervened, and had not subsided at the end of 24 hours.

In Denham's report I find one case of coma after chloroformic inhalation.

Doctor R. Lee says "that insanity has followed on its employment; that dangerous and fatal peritonitis and phlebitis have been caused by its inhalation."

Two or three of Denham's cases were seized with rigors; and Lee mentions "others with dangerous fits of syncope;" and in this he is borne out by the following, which I find recorded amongst Denham's cases:—"While inhaling, the pulse became very weak, and she gave no signs of consciousness; and, immediately on the birth of the child, the respiration of the patient ceased, and the pulse became imperceptible; the application of cold water to the face soon revived her, and she went on favourably for some days; but diarrhea, with extensive inflammation of the mucous membrane of the ileum, set in, and she died on the fourteenth day."

Sinclair and Johnston record nearly a similar case, as thus:—"The pulse suddenly became imperceptible, and respiration appeared to have ceased. She subsequently died of phlebitis." And they give another in which collapse occurred, and she died with symptoms of phlebitis.

Tyler Smith says "that he knew two ladies in whom a few drops of chloroform, at any time, would produce repeated fainting."

I am acquainted with a lady who, some time since, had a very severe attack of syncope from taking only five drops of chloroform in a draught.

Dr. Barnes stated—"That he had himself given chloroform to facilitate the extraction of an adherent placenta, and had witnessed such exceeding prostration for eight hours afterwards, as to make

him, and another practitioner who assisted him, apprehensive of the instant death of the patient."

Many are of opinion that the inhalation of chloroform predisposes to laceration of the perineum; indeed, some of the published cases would tend to favour this idea. In Sinclair and Johnston's Report, we find that, in the recorded cases, it occurred once in 27 cases; and when not employed, the accident happened only once in 93 cases. In the same work we find three cases of chest affection aggravated by this means, two of which succumbed. Dr. Ringland, one of the Masters of the Coombe Lying-in Hospital, in reply to a letter from me, thus writes:—

"I have seen chloroform frequently used in puerperal convulsions, and have used it myself in connexion with the practice of the Coombe Lying-in Hospital; and the conclusion I have come to is, that I will never again use it, or sanction its use, in puerperal convulsions. I have observed that, however satisfactory its employment may appear at the time, it has been almost invariably followed by bronchitis, within about 48 hours, and that the patients have sunk rapidly under the latter affection. I have seen this so frequently that I cannot but look on chloroform and bronchitis, under the circumstances I have named, as cause and effect; and the mortality from the subsequent bronchitis, as the actual result of the employment of chloroform."

Ramsbotham relates the case of "a lady who was seized with dyspnea, with excessive lividity of the face, and all the signs of engorgement of the lungs and heart, and died in convulsions six hours after."

Murphy has published a case nearly similar; he also admits "that vomiting, nausea, and headache sometimes follow on its use." Nausea and vomiting were also present in one of Denham's cases.

Rigby states, "that intense sick headache, and even vomiting, are consequences of its use."

I occasionally use a blistering fluid which contains chloroform, and if I am not very cautious during the *minute* I am employing it, I am certain to suffer from sick headache for the remainder of the day. Not long since, severe vomiting followed upon the inhalation of chloroform, during the operation for vesico-vaginal fistula, in one of our city hospitals; and, in spite of all remedies, lasted for six days. It is needless to say that the operation, in consequence

thereof, failed. I have so often seen this effect of the drug that I always object to its use in operations requiring the employment of sutures upon the female genitals. Thus it is evident that such a complication existing after labour would, like severe cough, predispose our patient to inflammation in parts, for whose restoration to health absolute rest is required.

Parks gives the case of "a lady in whom, after chloroform inhalation, flooding came on to a fearful extent, and incessant sickness. He managed to extract the placenta; and, owing to the feeble contractions of the uterus (and this latter condition, he is confident, it often produces), he was kept grasping it for four or five hours; the vomiting continued for eight hours without intermission, the headache remained for weeks."

Tyler Smith "believed that post partum hemorrhage and retention of the placenta occurred more frequently after its use than without it."

Montgomery was of opinion "that it predisposes to retained placenta and hemorrhage."

My friend, Dr. Young, before alluded to, says:—"I have blamed it for causing a longer detention of the placenta, and for occasional after-hemorrhage, owing to the lazy and inefficient contraction of the uterus. After its use opiates have very little effect; even very decided doses, in any form, have not been followed by that tranquillity I had hoped for, in that violent pain which I have so often found to follow operation when chloroform had been used."

Murphy speaks of making pressure on the uterus to expel the placenta, in two cases, after chloroform.

Denham had one case of retained placenta after its employment. He says:—"We had no reason to think that chloroform predisposed to hemorrhage; on the contrary, we were impressed with the idea that the number of hemorrhagic cases where it had been given were rather below than above the average in ordinary practice." This statement does not accord with my experience, and I should be sorry to think that hemorrhage so frequently complicated labour, "in ordinary practice," as once in every *nineteen cases*, as shown by his report. Some of the loudest advocates for chloroform inhalation in labour, have, in order to counteract its deleterious effects upon uterine action, recommended the co-administration of ergot of rye; which practice reminds me of the astute physician who, to be sure to hit his patient's disease, prescribed for him the combination of a stimulant with a sedative, and a purgative with a tonic. But I

hold there is a more serious objection than this to the wholesale use of ergot; for we cannot conceal from ourselves the fact that its administration, even in appropriate cases, is not always innocuous. Some years since the following case came under my knowledge:—Ergot was given to an unmarried lady to facilitate the birth of her first child, before her father, who was ignorant of her condition, had returned home to his dinner. The child was rapidly expelled, but sloughing, to a frightful amount, followed, and placed her life in jeopardy for days. And who has not seen the child sacrificed by it? For this reason, it has now-a-days become almost an axiom not to leave a female undelivered for a longer period than two hours after its employment. I believe that ergot of rye, in some cases, causes incarceration of the placenta and hemorrhage, and in others, sinks the patient; the uterus, after its use, often remains large and uncontracted for days, which state not unfrequently terminates in imperfect involution of the uterus and its consequences; which last effect chloroform also produces. Many believe that ergot, besides destroying the child at the time of its birth, acts sometimes otherwise deleteriously upon it, by inducing disease—to do so at a shorter or longer subsequent period—or to reduce it to a state to which death would be preferable.

Dr. Catlet, in the 57th volume of the *Edinburgh Medical Journal*, page 83, states that ergot of rye, when given during labour, causes puerperal convulsions, hour-glass contraction of the uterus, and infantile hydrocephalus. Amongst the cases of the last, I find one in which “symptoms of meningeal inflammation were developed on the 19th day, and the child died in convulsions, with coma, on the second day following.” And in another, “the symptoms of cerebral derangement set in suddenly on the 21st day, and the child died on the third day of the attack, in convulsions.”

Dr. Beatty, in a paper “On the Influence of Ergot of Rye on the Fetus in Utero,” published in the 25th volume of the *Dublin Medical Journal*, p. 201, amongst other cases after its use in labour, gives the following:—“Case 7. The child had convulsions for three days after its birth.” “Case 9. The child had convulsions for 48 hours after birth. They then subsided, but left the child in a state resembling paralysis, with occasionally a convulsive motion of the muscles of the face and limbs, and fixed strabismus. No treatment seemed to have any effect upon this condition. Twenty days after its birth the following report was taken:—‘This child has remained in a state of insensibility up to the present time; the

strabismus has lately disappeared, but it seldom opens its eyes. The limbs are apparently powerless. It makes no effort to suck, but it swallows breast-milk with difficulty when put into its mouth. The difficulty is increasing; the bowels act naturally.' In this state the child lingered on until the 25th day, when it died." Case 12. This child he first saw when three years old; "it then had an idiotic countenance, and was never free from spasms and palsy, commencing from its birth."

Cusack and others have also testified to the deleterious effects of this drug upon the cerebro-spinal system of the infant.

Dr. Snow says that "chloroform is a volatile spirit, and that half-an-hour after its application no traces of it could be found in the system."

Now, in refutation of this assertion, Dr. Ramsbotham mentions the case of "a lady who, for four or five days after its use, could not get rid of the smell."

Dr. Aveling speaks of "a lady who had chloroform in three labours, all of whose children, when unwell, had for years afterwards the smell distinctly off their breaths. This lady would never take it again."

In a monograph by me, on "Blistering the Os and Cervix Uteri," published in the May number of the *Dublin Quarterly Journal* of the year 1857, cases are mentioned of females having had the smell of chloroform off their breaths, evident to their friends as well as to themselves, and of others having experienced its taste, lasting, in both instances, for days after the blistering fluid containing that drug had been employed.

When sulphuric ether was first employed as an anesthetic in this country, a medical student inhaled it as an experiment in this city, and the smell of it was evident off his breath, to any one who spoke with him, for nearly a week after its employment.

Dr. Jackson (an American) thus writes upon the subject:—"When chloroform is inhaled into the lungs, the oxygen is abstracted from the blood, and, combining with the formyle, makes formic acid, while the chlorine combines with the blood as a substitute for oxygen. Thus a portion of the blood becomes chemically changed, disorganized, and rendered unfit for its vital functions. I have now a phial of blood, taken from a young lady killed by the inhalation of pure chloroform, before me, it having been kept in my office, exposed to temperatures from the freezing point to above 80°, for more than six years, and yet it has not decomposed, nor

has a single blood globule settled to the bottom of the phial, nor has the colour changed in the least." It has been denied that females, when under the influence of chloroform, make use of improper and indecent language. Now, I never shall forget the case of a lady I saw, in consultation, a couple of years ago, with an hospital surgeon, who, when chloroformed, threw her arms around him in the most endearing manner, and made use of language which would make her blush if in her senses, of which, I hope sincerely, she was never made cognizant.

Denham says:—"There are cases in which chloroform appeared to be not only useless, but, when persevered in, positively injurious." And again:—"In giving chloroform we incur a certain amount of present danger, and perchance of remote ill effects."

Dr. Robert Lee, in reply to a letter from me, says:—"I could give you a great number of cases in which chloroform was not only injurious, but fatal."

Dr. Gream said:—"He agreed with Dr. Lee in saying that we were quite unacquainted with *one-tenth* of the evil effects which had resulted from the use of chloroform, particularly in Scotland."

Dr. Duncan, in a letter to Dr. Lee, thus writes:—"Your case of chloroform death in midwifery is, to the best of my belief, not the only one in Scotland. I was called, too late, to a case which died suddenly while taking it in *small quantity*."

Dr. Campbell, of Ayrshire, records another case of death in labour from its use. Mr. Carter says "that in two cases its effects would appear to have been pernicious."

Professor Faye, of Christiana, has also recorded a fatal case of labour after its use.

Dr. Rogers said "he knew of a case where death took place apparently in consequence of its use in midwifery."

Dr. Barnes says:—"In ordinary forceps cases chloroform certainly is not required, either to facilitate the operation or to allay pain." Indeed by its use in such cases we lose one very valuable indication by our patient's want of sensibility. Dr. Chas. Kidd evidently does not consider its use devoid of danger, as he advises the physician who administers it "*always* to carry in his pocket a portable galvanic chain or battery." Drs. Kidd and Richardson are reported as having seen many deaths after its employment; and the former gentleman "to have seen about 300 cases restored to life or rescued after they had been pronounced dead." I would ask, in the name of common sense, is it within the bounds of reason to believe that a medicine

can be employed innocuously with the pregnant female, when confessedly its use has often been followed, not only by dangerous, but even fatal results under other circumstances, as testified to by Drs. Kidd and Richardson, amongst many others, as also by almost every periodical we take up? Dr. Snow, in speaking of his imagined advantage of chloroform over opium in version cases, thus writes:—"If 50 or 60 drops of laudanum were given, the patient remained under its influence, more or less, for 48 hours." Now, in this I must join issue with the doctor, for I am, and have been for years, in the habit of giving such, and even much larger doses in those cases, as also in hemorrhage, and I never yet saw such a result, or one at all approaching to it. We have been told that across the Tweed death has not, in any instance, followed upon the inhalation of chloroform in labour, whereas some have been since recorded; and not very long ago I was informed, by more than one physician practising in Scotland, that many have so occurred there, but not made public, yet well known to the profession. It is also a fact that some who have written favourably on its use have since changed their opinions, but have not said so publicly; and some give it only in name, or as has been styled *à la Reine*. The following is so apposite here that I cannot avoid quoting it from Denham:—"That chloroform may be, and sometimes is, given for the purpose of amusing patients, and making them believe that they are saved from a vast amount of pain, when in reality they have scarcely inhaled a single breath of it, I doubt not."

We very frequently see better and safer recoveries after tedious and painful than after rapid and painless labours, and the latter are not the less likely to be seriously complicated; indeed in former days, when, happy for the parturient female, chloroform was unknown, and when meddlesome midwifery was strongly reprobated, such an opinion was entertained. *Aprpos*, I have two patients—one the mother of five, the other of four children—who always have rapid and, I may say, painless labours, but which are invariably followed by alarming hemorrhage, by no means an unusual occurrence, as already shown, after chloroform inhalation, besides being admittedly a fruitful predisposing cause of puerperal inflammation. In the employment of anesthetic agents during instrumental delivery we deprive ourselves of a very valuable indication in the loss of our patient's sense of feeling, which the following cases forcibly illustrate; for had such means been resorted to in either, it must be evident to all, even to the most sceptical, that the consequences

should have been most disastrous:—Mrs. D. had a very tedious labour with her first child. When about 36 hours in labour, the os uteri was found thinned and spread tightly over the head of the child, dilated to about the size of a shilling, but directed obliquely backwards and upwards, so located as only to be found by the well-educated and practised finger. Her medical attendant, having failed to discover the real state of matters, took it for granted that he only felt the head, which had passed through the fully dilated os, and proceeded, without further delay, to deliver her with the forceps; but from the great pain which she experienced from the application of its blades on the head so clothed, he was obliged to desist; and, being much alarmed, he sought for further assistance, after which the nature of the case was discovered, when, of course, all interference was given over for the time, but eventually destructive instruments were had recourse to. The other was the case of Mrs. M., very similar to the former; but the perforator was the instrument employed, which the medical gentleman pushed into the cervix expanded over the head, when her piercing cries and some slight bleeding caused him to look more narrowly into the state of the parts. She was, however, afterwards naturally delivered, and had a good recovery.

At page 333 of *The Dublin Quarterly Journal of Medical Science* for May, 1849, in the late Dr. Montgomery's essay upon "The Indiscriminate Administration of Anesthetic Agents in Midwifery," we find a somewhat similar case recorded, in which the medical man mistook the attenuated anterior section of the cervix uteri for the membranes, which he was endeavouring to perforate with his nail, when the lady's cries arrested him.

Even though it were possible to divest chloroform of its dangers, it does not, as has been already shown, always produce the advantages expected from its use, as in version; for indeed not a few instances have been recorded of its having been an impediment to this operation, which in some cases could not be overcome. I cannot see any advantage derivable from the inhalation of this poisonous drug in cases of retained placenta, as generally such a complication is caused by inaction of the uterus; and our object, therefore, ought to be to induce uterine action, surely not further to paralyse it. Such treatment reminds me of a case which I was called to see 20 years ago. The placenta had been retained for six hours, and some draining was going on. The lady's medical adviser was looking on very complacently, and dosing her with tartar emetic. Of

course there was not any difficulty in the extraction; but puerperal inflammation set in on the second day, from which she eventually, but slowly recovered. Every practical man hails after-pains as salutary, especially after quick and painless labours, and would not dream of interfering with their wholesome action, unless very severe, for some hours after delivery; yet those misguided chloroformists think nothing of interfering with that safe action at times when the advent of hemorrhage would complicate matters more seriously. The other objections to its use at other times, under certain circumstances, are equally admissible here. I think I have now demonstrated that chloroform inhalation is far from being a safe remedy in childbed, and should not then be employed.

ART. XIV.—*On the Employment of Iridectomy for the Cure of Certain Diseases of the Eye.* By J. G. HILDIGE, M.D., F.R.C.S.I., Surgeon to the National Eye and Ear Hospital, &c., &c.

ALTHOUGH the employment of iridectomy for the cure of certain inflammations of the ocular bulb has now been adopted by almost all the leading ophthalmic surgeons in Great Britain and on the continent, yet, I regret to say that in this country it has hitherto been, to a very great extent, repudiated. As I am at a loss to conceive how so valuable a remedy could be condemned without a trial, particularly by practitioners in this special branch of surgery; and as cases are being continually sent to me when the period for operating has long since passed over, I have determined to point out, as briefly as possible, the class of diseases in which I have found the operation to be of the greatest efficacy.

The operation was introduced into this country, some four or five years ago, from Berlin, as a remedy for the cure of three forms of inflammation of the eye, viz:—1st. Chorio-iritis, with exclusion of the pupil, characterized by zonular injection of conjunctiva; ciliary vessels prominent and tortuous; diminished capacity of anterior chamber; discolouration of iris; complete posterior synechia; pupil in most cases irregular, sometimes filled with exudation, and in other cases perfectly clean; vision may be but slightly impaired, or completely destroyed, according to the progress the disease has made; in the latter stages cataract is, not unfrequently, superadded. 2nd. Acute

chorio-iritis, called acute glaucoma, characterized by intense injection of the conjunctiva, epiphora, and sensibility to light; pupil widely dilated; loss of transparency of refracting media; and attended with intense pain in the eyeball and temple, and a very great degree of constitutional irritation; this form of disease may completely destroy vision in 24 hours. 3rd. Glaucoma, divided by von Graefe into inflammatory and chronic.

Inflammatory glaucoma he describes as commencing, in most cases, with presbyopia, alternating with hyperesthesia and anesthesia, until the latter prevails; the pupil becomes gradually dilated and immovable, and pain in supra-orbital region sets in. This stage may last months, even years; it may also be altogether absent. Intra-ocular pressure, when it sets in, produces blindness (amaurosis by compression) remarkably quickly, and is accompanied by intense pain in brow and temple, muddiness of aqueous humour, and deposit on posterior surface of cornea. The iris also becomes distorted and bulged forwards, and this may be accompanied by either loss of sight or a narrowing of the field of vision, with photopsia, chrupsia, &c., &c. When a still greater degree of tension of the bulb ensues, insensibility of the cornea, mydriasis, and eventually atrophy of the tissue of the iris take place. If the refracting media be not too opaque to admit of ophthalmoscopic examination, one finds constantly progressing excavation of optic papilla and pulsation of its arteries. The anterior chamber becomes smaller, the eyeball assumes a stony hardness, and the cornea loses its normal curve. What is most characteristic of inflammatory glaucoma is the repeated occurrence of internal inflammation, which, with diffuse exudation into vitreous and aqueous humours, leads, sooner or later, to complete blindness, under the phenomena of pathological increase of intra-ocular pressure, principally on the retina.

Chronic glaucoma originates insidiously, but eventually is characterized by the same phenomena as the preceding form. The anterior ciliary vessels become dilated, the bulb becomes hard, and the field of vision contracts, and gradually becomes dim from the centre to the circumference; the structure of the iris alters so slowly that the alteration can only be detected by comparison with other eyes; and it is only in advanced cases of the disease that the ophthalmoscope shows excavation of the optic nerve and pulsation of its central vessels, occurring either spontaneously or produced by pressure on the eyeball. All the symptoms of intra-ocular pressure are present, as in inflammatory glaucoma, but not so prominent. It also

frequently occurs that this form of glaucoma runs into the inflammatory, and *vice versâ*. At a later period of the disease the optic nerve and retina become atrophied.

These three forms of inflammation, although differing considerably in their pathological phenomena, yet have all one characteristic symptom in common, viz., increased intra-ocular pressure; and, in order to show the therapeutic effect of the iridectomy, I shall cite a few of the cases which have been operated on by myself, within the last two or three years, as well as others which have come under my observation:—

CASE I.—J. H., Esq., of Sligo, aged about 45, of robust and healthy appearance, was sent to me, in the autumn of 1861, by Dr. Ellis, of Leeson-street. The history of his case is as follows:—Some four or five years previously he had suffered from an attack of inflammation of the left eye, for which he was leeches, blistered, and given mercury, &c., &c.; but, notwithstanding all treatment, his sight became gradually worse, and at the end of two years he became perfectly blind of the eye. His right eye remained quite healthy for some 18 months afterwards, when it also became affected, and for which he underwent a repetition of the same treatment which had been employed to check the disease in the other. According to his own statement he was now gradually going blind of this eye also. He had always enjoyed good health up to the period when his eyes became attacked, and had never suffered from gout or rheumatism. On examination I found his eyes in the following state:—Left eye of normal size, hard to the touch, and of hyper-presbyopic build; conjunctiva of a yellowish tinge; ciliary vessels prominent; anterior chamber reduced to a minimum, so that the cornea and iris were almost in apposition; iris much discoloured, and the pupillary margin adherent in its whole extent to the capsule of the lens; pupil of normal size. The lens and its capsule were but slightly opaque, the latter having a quantity of pigment—which had probably fallen from the posterior surface of the iris—deposited on its anterior surface. I could not make any satisfactory ophthalmoscopic examination. Vision in this eye was so completely destroyed that he could not see the flame of a candle held within a few inches of his face. The right eye was affected in the same manner, although the disease had not advanced so far, there being still tolerably good vision for near objects, as he could read No. 14 of Jäger's type without glasses, but at the distance of five or six

yards he could not recognize faces. I informed him that medical treatment was out of the question, and that iridectomy was the only remedy which would arrest his disease, and prevent him from becoming completely blind. I also added that the operation would, in all probability, have saved his left eye, had it been performed in an early stage of the disease. He left my house to consult his friends on the subject, and I had not an opportunity of again examining him until nearly six months afterwards, during which time his vision had become very much worse. On his former visit the field of vision was not materially narrowed; but now he could scarcely discern objects placed on his left side at the distance of two or three yards from him. He could read No. 19 of Jäger's type when held close to his face; but this with great difficulty. The anterior chamber had become much smaller, and the iris bulged forward laterally, so as almost to touch the cornea. The lens and its capsule were now slightly opaque, but the vitreous humour was so hazy as to prevent ophthalmoscopic examination. An interesting point with regard to his vision now was the extreme astigmatism for objects placed vertically before him, showing the loss of symmetry about the axis of the eye.<sup>a</sup> Lines, and objects such as walking-sticks, when placed before him appeared elongated almost *ad infinitum*, so that the patient declared to Mr. Colles, V.P., R.C.S., with whom I saw him in consultation, that a lamp post appeared to him as long as Nelson's monument. As the patient had now determined to submit to the iridectomy, it was performed on him immediately after the consultation, Mr. Colles remaining and assisting at the operation. The only incident worthy of notice which occurred during the operation was the profuse hemorrhage which followed the excision of the small portion of iris, the anterior chamber being filled two or three times with blood, an occurrence which I have observed in almost every case of this kind in which I have operated, and which I shall allude to when describing the *modus operandi* of the remedy. The blood which remained in the anterior chamber after the operation was absorbed in about ten days; the chamber gradually assumed an almost normal depth, and at the end of the third week vision commenced to improve, the astigmatism which had, previous to the operation, so greatly annoyed him gradually disappearing.

The improvement which took place from this period in his state,

<sup>a</sup> A fact first pointed out by Mackenzie, I believe, in the fourth edition of his work.

though slow, was most remarkable. By degrees he commenced to recognize large objects at the distance of five yards; and at present, one year after the operation, his state is as follows:—The disease is completely arrested; the eye has recovered its normal tension; conjunctiva assumed a healthy and natural colour, and anterior chamber of good depth. There is a large iridectomy at the internal or nasal side of iris, which has its apex at the ciliary ligament and its base at the natural pupil; the patches of pigment have, to a considerable extent, disappeared from the lower part of the capsule of the lens, which, together with the lens, is slightly opaque. There is a small space between the apex of the triangular opening in iris and the circumference of the lens, which sometimes causes double vision, particularly when he looks downwards at small objects; this, however, has almost ceased to annoy him. His sight is now so much improved that he can correspond with his friends—myself among the number—can superintend his farming operations, and can see large objects, without glasses, at the distance of ten yards from him.

The *modus operandi* of the operation in this case was two-fold: it acted immediately, taking the pressure off the retina *anteriorly*, by restoring the communication between the anterior and posterior chambers of the eye; and it acted secondarily by draining the gorged vessels of the choroid of the blood contained in them, and thus, acting as a powerful antiphlogistic, checking the inflammation of that membrane and reducing the pressure on the retina *posteriorly*. I have hitherto hesitated to publish the latter part of this explanation, *i.e.*, relative to the draining of the vessels of the choroid, inasmuch as I was not aware, until very recently, that this opinion was entertained by any person but myself. It is therefore with very great pleasure that I have lately seen it advanced by Pagenstecher as the principal means by which the operation acts on the disease.<sup>a</sup> The hemorrhage which followed the excision of portion of the iris in this and other cases is one of the strongest proofs that can be adduced in favour of this theory; and this has recently been corroborated, in the most conclusive manner, by a case of chronic chorio-iritis (far advanced) on which I twice performed iridectomy, the iris being quite rotten, and coming away in shreds; no hemorrhage following its incision, and the improvement which followed both operations being but temporary.

<sup>a</sup> This can be easily understood from the vascular connexion between the iris and choroid.

CASE II.—The wife of the Rev. Mr. L., of Tralee, aged 40, consulted me in the year 1859, suffering from agonizing pain in right eye and temple, with sympathetic irritation of left eye. Her case was as follows:—Some years previously she was attacked with acute inflammation of right eye, for which she was leeches, blistered, and salivated, with considerable alleviation of her symptoms. Subsequently she suffered from a relapse of the attack, for which the same remedies were employed without effect. The sight of the eye became gradually worse; and eventually, after a long period of suffering, she became totally blind of it, the pain in eyeball and temporal region continuing to increase in frequency and intensity until she declared her life had become miserable; she was much wasted from the continual suffering and sleeplessness. On examination I found her right eye had been destroyed by chorio-iritis (sub-acute). There was no anterior chamber, the cornea and iris being in apposition; pupil excluded; lens and its capsule completely opaque, and not the slightest trace of vision remaining. The left eye was sympathetically affected, constant trickling of tears, photopsia, &c., &c., so that she was unable to use it for any length of time. I explained to the patient that the sight of the right eye was irretrievably gone, but that an operation would arrest the agonizing pain in it from which she suffered, as well as put a stop to the sympathetic irritation going on in her left eye. She stated she was quite ready to submit to any operation which would afford her a prospect of relief; consequently, a few days afterwards, I performed iridectomy on her, she having been previously placed under the influence of chloroform. Considerable hemorrhage followed the excision of the portion of iris in this case also; but the operation was followed by little or no irritation, and there was no return of the intense pain in orbital and temporal regions, from which she had suffered so long, and which had seriously impaired her general health. Three weeks later all symptoms of pain and irritation had disappeared from both eyes; and at the end of two months she returned home much improved in health and spirits, free from pain in right eye, and almost normal vision of left eye.<sup>a</sup> The optic nerve and retina of right eye were, in all probability, atrophied in this case.

In acute glaucoma (*i. e.*, acute chorio-iritis) the eye is so rapidly destroyed by the inflammation that unless the operation be performed

<sup>a</sup> Mr. Colles was present at this operation also, and saw the case subsequently.

within the first 24 hours after the acute symptoms have set in, there is but little chance of saving vision, or indeed of saving the eyeball, as the destruction of vision is generally followed by atrophy of the globe.

In the early part of the year 1860 I was requested by a medical friend to visit a lady residing in Leeson Park, who had been suffering from intense pain in right eye for some three or four days previously. On examining her I found the eye much injected, with a small anterior chamber, and slightly dilated pupil, but not a trace of vision. She had been given mercury and leeches at the commencement of the attack, but this treatment had not had any effect on the disease. She was not aware that she was blind of the eye until she closed the other, and seemed to be rather astounded that the sight of it could have been destroyed so rapidly. In this case iridectomy, performed at the commencement of the attack, would, in all human probability, have saved vision.

In cases of chronic glaucoma the operation, in order to produce a beneficial effect, must be performed before the field of vision has become much contracted, as, when this is the case, atrophy of the retina has set in, and all that we can hope for from the operation is to preserve to the patient the degree of vision that he is in possession of at the time he is operated on. When an eye has become completely blind from chronic glaucoma I need scarcely say that the operation is then worse than useless, except, indeed, to arrest the intense pain which is occasionally present in orbit and temple.

A poor woman, having both eyes completely destroyed by chronic glaucoma, was brought to my house, some time ago, by Dr. Bigger, who informed me that she had been sent to him from a special hospital, with a note stating that if iridectomy produced the slightest improvement of vision in her case the writer of the note would become a believer in the operation. I pointed out to Dr. Bigger that vision was so completely destroyed that a candle, held about three inches from the patient's face, could not be seen by her, the optic nerves and retinæ of both eyes being atrophied, and that it was by performing iridectomy on such cases that the operation had been brought into disrepute in these countries.

The following case of chronic glaucoma came recently under my observation:—A lady, aged 65, consulted me, in the autumn of 1862, affected with tolerably far advanced glaucoma of right eye, the left having been previously destroyed by the same disease. The field of vision of right eye was much contracted, all objects

near her appeared as if seen through smoke, and she could only read large type when held close to her face. The usual phenomena of chronic glaucoma—hardness of the eyeball, haziness of the refracting media, dilated pupil, &c., &c., were present. She stated that she had lost her left eye some years previously; and that about six months before consulting me she noticed that the sight of her right eye had also become affected, and that it was now growing rapidly worse. I informed her that she should lose no time in having iridectomy performed, as otherwise the disease was progressing so rapidly she would inevitably become blind before six months were over. She declined submitting to an operation at that time, and lost two or three months deliberating on the matter; eventually, at the eleventh hour, she went over to London, and was operated on by Mr. Bowman, who has kindly sent me the following notes of her case:—

“5, Clifford-street, February 23, 1863.

“MY DEAR SIR,—I operated on Mrs. P., on the one eye which continued to have perception of light. The case was one of long standing chronic glaucoma, with partial flocculent opacities in the lens, and the field of vision was very contracted, with hardly more than vision of bright objects in certain directions—altogether a most unfavourable and complicated case, and offering, as I explained to her, very little prospect from any operation. As the glaucoma was rather rapidly destroying the remaining functions of the retina, I performed iridectomy, which she bore perfectly well, and from which she derived the little benefit I expected, viz., a *restoration of the natural tension of the eye*, but no expansion of the field, and no positive increase in visual power. Whether, in such a case, the retina will retain the little activity it possesses, or gradually fail entirely, must be doubtful. Of course the cataract will, sooner or later, advance, and will have to be operated on, should it ultimately appear worth while; and this I explained to her before the iridectomy.

“What I do so much lament in similar cases is, that *iridectomy has been delayed* until structures as well as functions are hopelessly deteriorated, and until the operation, which *at an earlier period* would have proved a great and inestimable boon, has hardly any longer a chance of rescuing the little remaining sight from destruction.

“You may make any use you please of this letter.

“Yours truly,

(Signed)

“WILLIAM BOWMAN.

“Dr. Hildige.”

Those students who have passed a winter at von Graefe's *clinique* at Berlin cannot but have witnessed, as I have done, numerous and brilliant results from iridectomy. The same may be observed at Professor Arlt's ophthalmic *clinique*, in Vienna; at Professor Donder's, in Utrecht; at Professor Sperino's, in Turin; at Dr. Desmarre's, in Paris; and last, though not least, at Moorfields Hospital, in London, to the medical officers of which institution—Messrs. Bowman, Critchett, and Dixon—the operation owes its introduction into Great Britain. "Humanity," says Professor Donders, of Utrecht, "demands that prejudice and ignorance should cease to oppose the introduction of iridectomy for the cure of glaucoma," and so, it appears to me, must every impartial examiner say also, who, for himself, has carefully studied the subject.

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ART. XV.—*Cases of Pleuritic Effusion.* By SAMUEL GORDON, M.B., F.R.C.S.I., Physician to the Richmond, Whitworth, and Hardwicke Hospitals.

THE following cases I believe to be possessed of some practical interest, chiefly as bearing, more or less, upon the subject of *paracentesis thoracis*; but also from various incidental occurrences:—

CASE I.—*General Anasarca, Pleuritic Effusion, Thoracentesis; Hematemesis; Inflammation of the Epiglottis; Death from Over-exertion.*

May 13, 1862.—I was requested to see a gentleman who had been for some time suffering from general dropsy. He was universally anasarcaous, and to a great depth, the lower extremities being excessively swollen and œdematous, so much so as to render him quite powerless. He lay on his left side, and the right upper extremity alone had escaped extreme tension; the scrotum and penis were greatly infiltrated; his breathing was short and rapid; his lips blue; he could not speak even a short sentence without drawing his breath repeatedly. The heart's sounds and impulse were feeble, but there was no abnormal murmur. The jugular veins were permanently distended and pulsating; the pulse very small and frequent. The respiratory murmur was audible over the entire of both lungs; the liver was enlarged towards the epigastrium, and

hard. The urine was scanty, very high coloured, depositing copious brick-coloured sediment; bowels acting freely. His mouth was sore from mercury, and his breath had a strong mercurial fetor.

14th.—Weaker; breathing shorter; the anasarca rather increased in the upper extremities.

15th.—Slept badly from dyspnea, which increased rather suddenly in the middle of the night. He several times complained of choking and difficulty of swallowing, and became very restless, tossing about and throwing off the bed-clothes, and calling for air. A medical gentleman who sat up with him, attributing all these symptoms to weakness, supplied him largely with stimulants; he took, every 20 minutes, either brandy, or sal volatile, or compound spirit of lavender. I saw him very early on the following morning; he had not slept; his skin was cold; the anasarca had greatly increased; his breathing had become excessively laboured and difficult, so that he could not breathe in the recumbent position, and yet the anasarca was so great that he could not be placed erect in a sitting posture. He was completely unable to turn himself in bed, or even to give any assistance in moving himself. The kidneys had almost ceased to secrete any urine, and he was suffering from a constant intestinal tenesmus, without being able to pass any feculent matter. Even through the great depth of anasarcaous swelling I was able to satisfy myself of the great difference between the physical signs existing in opposite sides of the chest. The left side was almost perfectly dull, and there was no respiratory murmur audible over any part of it. The heart was slightly displaced downwards and inwards; its impulse was scarcely perceptible. An enema with castor oil and tincture of jalap relieved the bowels and caused some urine to flow, which was loaded with lithates; but it was clear that no relief to the dyspnea was to be expected except from operation. During the day he became more distressed; his breathing shorter and more laboured; his lips becoming blue, and his pulse failing; his skin becoming more cold. At 3 o'clock Dr. Mayne saw him with me, and it was determined to afford him the chance of relief by thoracentesis. Accordingly, having made a small but deep incision in the left lateral region, I introduced the ordinary small-sized hydrocele trocar into the pleura, between the fifth and sixth ribs, and a stream of serous fluid escaped through it. The depth of anasarca was so great that I was obliged to make a very painful amount of pressure to retain the canula in the pleura, and at length its lip became buried in the wound. We then introduced

a canula  $3\frac{1}{2}$  inches long, and this barely sufficed to reach the pleura without pressure; the quantity of fluid drawn off amounted to five pints. It was entirely serum, without any admixture of blood, pus, or flakes of lymph. The relief which he experienced was very decisive; it was first manifested by the excessively blue colour of his lips being replaced by a more healthy arterial hue, the frequency of his inspirations then became less, and his efforts to inspire less marked, the *alæ nasi* less dilated, and the heavings of his chest less powerful. He presently lay down and slept tranquilly for two hours. In the evening the apex of the heart had returned to its normal situation; the pulsation had left the veins of the neck, and their distension was greatly relieved. Through the incision made in the side the discharge of serum from the cellular tissue had been so great that all the bedding was more than saturated.

His sense of relief was immense; and his only complaint now was a sensation of intense heat or burning, which he referred to his stomach. Some hours after this, he began to throw up a quantity of very sour water; at first colourless, it was afterwards very green, and during the night became dark coloured. This affection of the stomach continued to increase in severity. I saw him about four o'clock next morning; the vomiting recurred about every 10 minutes; the quantity of fluid ejected each time was from two to four ounces, and sometimes about six ounces. It was obviously hematemesis, the colour of the blood being altered, by admixture with gastric juice, according to the time it lay in the stomach. Each act of vomiting was preceded by a sense of great heat in the epigastrium, and pain; but there was little or no sense of nausea or sickness. There was extraordinarily little sinking of the vital powers, considering the amount of blood or fluid thrown off from the stomach, and the frequency with which the attacks of vomiting recurred. The hematemesis continued with great severity throughout this day (16th), the quantity thrown up could not have been less than four pints. We looked upon it as caused by the gastric veins being overloaded, partly by the backward pressure from a *vena portæ* obstructed by hepatic disease, and partly by the effects of a gastritis induced by the excessive administration of stimulants on the night of the 14th.

We contented ourselves with the free use of ice internally—occasionally a little iced champagne or moselle, and very free counter-irritation, and having the bowels relieved by active enemata

17th.—The vomiting somewhat less frequent, but still of the same character. His pulse more full and less frequent; urine secreted in greater abundance, still depositing lithates most copiously. He takes ice and cold water, and cold chicken tea, and a little moselle occasionally. During the day the vomiting gradually subsided, and towards evening ceased altogether. During the night he slept pretty well; but on the morning of the 18th we were surprised to find him very hot and more feverish, restless and tossing about, and complaining of inability to swallow, and a sense of great tightness about the throat; on the least exertion there was great dyspnea. Besides the sense of constriction, he complained of a constant accumulation in his throat, which induced frequent cough; and in this coughing he frequently lost his breath, and felt and appeared in danger of suffocating; he could not swallow without great pain. He was a man of immense moral courage; and when Dr. Mayne and I pressed him to let us see him drink, he said, "I will swallow anything you like, but it is perfect agony." We filled out a dose of a diuretic mixture, which he had been taking, and, on handing the glass to him, he at once reminded me of what I had once seen a man in hydrophobia do when similarly urged—he took the glass in his hand, but turned away his head to prevent himself from seeing it, and, with evidently an immense effort which produced a rigor at the moment, he swallowed the contents; and, throwing the glass from him, said, "Surely you will not ask me to do that again," and was immediately seized with a most violent convulsive cough.

We had to wait a considerable time before we could venture to enter upon any further local examination. On looking into the throat we could not see anything abnormal; but it caused him very considerable pain when we pressed down the tongue in making the investigation. Still he bore the pain, and allowed us to make a very full examination. I then introduced my finger, and felt the epiglottis considerably enlarged, and unyielding; the examination induced another paroxysm of coughing. There was some soreness and fulness externally above the thyroid cartilage. There was no weakness nor any alteration of the voice whatsoever; but when he did swallow fluids they were partly regurgitated; and even on coughing there was a discharge of mucus through the nares.

His great source of distress was the constant accumulation in the throat of viscid tenacious mucus, which he found it impossible to get rid of; and the pain he suffered when he occasionally tried

to swallow his saliva, which was secreted in undue quantity, was excruciating.

We looked on the case now as a distinct inflammation of the epiglottis, so graphically described by the late Sir Henry Marsh (*Vide Dublin Journal of Medical Science*, Vol. XIII., p. 1), and hoped that the œdema of the glottis would not supervene. We applied a few leeches externally, close to the os hyoides, and then covered the throat with a very light and very hot emollient poultice, while we made him inhale the steam of hot water, impregnated with some aromatic herbs, having first, in the usual way, applied a strong solution of caustic to the epiglottis. This produced immense pain, and great additional suffering at the time, but afterwards the secretion of mucus was greatly diminished, and he experienced proportional relief. We did not venture on the exhibition of mercury, for his mouth had not yet recovered from his late salivation. The only thing we could induce him to take all day was a little iced claret, and even that seemed to produce exquisite suffering; he was very drowsy, but he frequently started up as if suffocating, and this appeared to be caused by the flow of saliva into the larynx through the unguarded rima. Position did much to relieve him from this annoyance; he was placed sitting almost erect in the bed, supported by a very high bed-rest, and the saliva flowed from his mouth. In this way, towards evening, he got two hours uninterrupted sleep, and awoke greatly refreshed.

19th.—He was improved; he had had some quiet sleep, but still in the semi-erect posture; he could lie down without the least dyspnea, and he could swallow a little jelly with less pain. The same soothing plan of treatment was continued, for there was very little alteration in the condition of the epiglottis; but on the

20th—It was decidedly less turgid and more flexible, and the pain on pressure at the root of the tongue no longer existed. He now took full doses of iodide of potassium in bark, and in a few days he had perfectly recovered from this alarming affection. His progress towards recovery from the dropsical affection was also very satisfactory. The extremities had returned to almost their natural size, and there was no evidence of pleural or abdominal effusion, but the heart's action was very feeble, and occasionally intermitting, without, however, any evidence of valvular disease; the liver, also, was somewhat enlarged towards the epigastrium; there was no evidence, microscopically or otherwise, of any renal affection.

Any undue exertion brought on urgent dyspnea, and palpitation, and intermitting pulse; still he was progressing satisfactorily, when on the

27th—He insisted on being allowed to get up; he remained up all day, and taxed his strength to an almost incredible amount. When he got back to bed he could not sleep from fatigue; passed a very bad night, and next morning I found him in a hopeless condition from exhaustion and debility. He took a large quantity of stimulants in the course of the day (28th), but he died at 10 o'clock that night. The body rapidly decomposed; no *post mortem* examination was allowed.

Whether we look upon the effusion in the above case to have been a hydrothorax, or the result of an inflammation of the serous membrane, the rapidity with which it supervened, and the urgent dyspnea which it caused, rendered the operation imperative. It is to be remembered in such cases that the dyspnea is produced not merely by the mechanical pressure on the lung; if it were so it might be advanced that the right lung would suffice to carry on the mere act of respiration, but when the diaphragm cannot yield on account of an already over-distended abdomen, the heart is compressed in a manner almost incredible to those who have not seen it under such circumstances. A very remarkable instance of this kind, which I brought under the notice of Mr. Adams, was presented by him to the Pathological Society, many years ago (*Vide Dublin Medical Journal*, XIX., p. 322), and the amount of compression which it suffered may be judged of by the fact that the heart remains to this day with the cavities folded up, nearly in the same condition as when removed from the body and exhibited by Mr. Adams. The drawing of the recent appearances, and the preparation, are still preserved in the Richmond Hospital Museum. I believe that cases like the present, where the operation is almost imperative, are those which are most likely to prove completely successful, not merely in obtaining complete relief to the patient's dyspnea, and comfort and respite from his other sufferings, such as cough, forced position, &c., &c., but, under such circumstances, the fluid is not likely to re-accumulate. From many examples which I could adduce, I will only give the following, with Dr. Stokes' permission:—An army surgeon, who has since died of cholera in India, rode several miles from the Curragh Camp one night, in very heavy rain, to see an eminent personage who was suddenly taken ill. After considerable delay, he again rode home, and

remained for some time in his wet clothes. On the following day he was seized with acute pain in his side; and from that moment dyspnea set in, and hourly increased. He came up to Dublin, and put himself under the care of Dr. Stokes, who, finding all medicines and medical appliances useless to control or reduce the effusion which had taken place, requested of Mr. Adams to see him. No time was lost in drawing off the fluid, which was altogether serum, and amounted to five quarts. The lung almost immediately expanded to its full dimensions, and the patient recovered completely and rapidly.

We are warranted, then, in expecting that, in cases of sudden extensive pleural effusion, paracentesis will not only relieve dyspnea, but, if it be a primary lesion, that the effusion will most probably not recur.

The diagnosis as to the cause of the hematemesis was given, I conceive, on sufficiently clear grounds. In connexion with hepatic disease hematemesis occurs only when the branches of the vena portæ are constricted by a more or less permanent pressure on them, as in cirrhosis of the liver. Professor Law made this statement long ago,<sup>a</sup> and experience has confirmed its accuracy. Another very characteristic, although negative, sign of the existence of adhesive inflammation of the liver was to be found in the fact of its want of enlargement. With such impediment to the emptying of the vena cava as existed in this case, it is impossible to conceive but that the liver, if not so affected, would have become enlarged, as we know it to be capable of doing under ordinary circumstances; but neither did the right lobe become enlarged when venous circulation was so much obstructed, nor did it become reduced in size when the obstruction was removed; the undue quantity of stimulants no doubt favoured the occurrence of the hematemesis at the moment.

The inflammation of the epiglottis we considered to have been produced by the local action of the gastric secretion upon it. Even although occasionally diluted by the large quantity of blood which was thrown up with it, the quantity of acid secretion which must have passed over the laryngeal surface of the epiglottis, and its almost continuous passage over it for many successive hours, were more than sufficient to produce an inflammation even so acute as our patient laboured under. He had not been subjected to any exposure or other undue influence which could have caused it; but whatever may have been the cause, and that is comparatively

<sup>a</sup> See Dublin Medical Transactions, N. S., Vol. i., p. 3.

immaterial, it is worthy of observation, the very clear diagnostic signs which existed, pointing out the affection of the epiglottis as totally distinct from that other more formidable, although, perhaps, except in extreme cases, less painful affection—œdema of the glottis.

This patient's death was caused, I think, partly by a weakened condition of the muscular fibre of the heart, as evidenced by the changes which took place in the body so rapidly after death, and partly by syncope, induced by extreme fatigue, from the patient so suddenly leaving the recumbent position to which he had been long confined, and making such undue exertion for so many successive hours. This I believe to be a more common cause of death than is generally imagined. I could point to more than one valuable life which, convalescent from typhus fever, has been lost by too sudden and protracted exertion; and to many others, the subjects of fevers and other acute diseases, in which, although the consequences were not fatal, relapses and distressing sequelæ were induced.

CASE II.—*Interlobular Empyema; Paracentesis; Insertion of Drainage Tube; Recovery.*

James Halpin, aged 36, a brewer's drayman, was admitted into the Whitworth Hospital, on the 8th of May, 1862, complaining of cough, difficulty of breathing, and weakness and emaciation, which were rapidly increasing.

He was bent forward, and could not by any means stand or walk erect. He was suffering from well-defined hectic, of which he had a daily paroxysm; he had also profuse purulent expectoration. I learned that he had been in the adjacent Hardwicke Hospital, from the 17th of December, 1861, until the 17th of February ultimo, under the care of my colleague, Professor M'Dowel, who at once recognized him as having at that time laboured under a very severe pleuro-pneumonia of the left lung.

His pulse was now 140 in the minute, and very feeble; his breathing short and rapid; he was very weak, and had very little appetite. His cough was very violent, paroxysmal, bringing up large quantities of purulent matter, which appeared to *flow* from his mouth; and this cough was frequently accompanied by vomiting, sometimes of half-digested food, sometimes of green watery fluid.

The physical examination of the chest did not confirm the idea of this being an ordinary case of pulmonary phthisis. The respiratory murmur throughout the right lung was puerile, and the sound,

on percussion, loud. There was large loose crepitation in the upper part of the left lung, with distinct, though feeble, respiratory murmur over all the posterior part; but there was complete absence of respiration, and perfect dulness, on percussion, over a large space in front, on the left side. This space included all the lower sternal region, and passed across to the cardiac region. The heart was displaced downwards and a little backwards.

Except for the displacement of the heart *downwards* it resembled very much an extensive pericardial effusion. However, the very profuse purulent expectoration (amounting to upwards of three pints in the 24 hours) being evidently vicarious—inasmuch as there was no evidence of a pulmonary cavity from which it could be secreted—determined to my mind that the pus was originally secreted in the cavity of the pleura.

Dr. Hutton, who also saw the case with me, and Professor M'Dowel gave it as their opinion "that it was no ordinary case of empyema."

The symptoms became very urgent—that is, when he had been a week in hospital he was unable to lie down in bed, and the cough was so constant as to deprive him of sleep. The amount of purulent expectoration was increasing, and the debility was extreme. Under these circumstances I determined to make an exploratory puncture into the space above defined, and was considering where exactly to make it, when, on the 20th, a soft tender spot had formed over the cartilages of the last ribs. Into this I made a rather deep incision with a very small scalpel, and gave exit to about four ounces of very fetid matter. On the following day I introduced a director, and, finding it stopped, I passed a medium-sized trocar and canula through the obstruction, and drew off upwards of a quart of most fetid matter. This perforation of the pleura, between the cartilages of the ninth and tenth ribs, was followed by immense relief to his breathing; and the cough and expectoration ceased almost instantaneously, and the crepitating rattle at the apex of the left lung soon became inaudible.

I would briefly refer to this practical point, as elucidating what I believe was originally adduced by Andral,<sup>a</sup> and afterwards very fully explained by Dr. Corrigan<sup>b</sup>—the formation of an external abscess in empyema—the communication, if any, existing between them being so small as practically to be of no remedial service. It

<sup>a</sup> See Andral's *Pathological Anatomy*, Spillan's Trans., p. 571.

<sup>b</sup> *Dublin Quarterly Journal*, Vol. xviii., p. 144.

is of the utmost importance in such cases to be satisfied, "not merely," as Andral expresses it, "that the abscess formed between the ribs and skin has been opened, but that a real operation for empyema has been performed;" and the extent to which the skin becomes undermined, and the amount of purulent matter which lodges in the external abscess in these cases are often fertile sources of deception. I had no doubt of this case being a partial empyema, and the local tenderness and swelling further reduced it to an empyema of necessity. On one or two occasions, when the patient assumed a particular posture, there was a certain amount of pulsation communicated to this swelling; but this was evidently owing to its proximity to the heart or pericardium. Had it been continuous, however, it would have rightly given to the tumefaction the further title of pulsating empyema of necessity.

He continued to progress favourably for several days; but on the 1st of June, the wound having closed some days previously, he was again attacked with cough, fetid expectoration, and dyspnea. I reopened not merely the cutaneous wound, but also divided freely the internal band, and, as before, gave exit to an immense quantity of fetid purulent matter. I took the opportunity to sound the depth of the abscess by means of a gum-elastic catheter. I found it to pass freely, and in the direction of the interlobular fissure. I also satisfied myself that the wound was at the lowest part of the chest, almost resting on the diaphragm. When the intra-thoracic abscess was again evacuated the pulmonary crepitation again ceased, as also the cough and fetid expectoration; and during the progress of the case these symptoms recurred on several occasions, but always subsequent to the closure of the wound, and again disappeared on its being re-established.

The due appreciation of these phenomena in connexion with empyema is a matter of the greatest importance to the practical physician. They have been repeatedly mistaken for positive evidences of phthisis; thus not merely inducing a wrong diagnosis, but sanctioning a neglect of remedies calculated to produce permanent and entire relief. Their real significance has been most fully elucidated by the late Professor Greene<sup>a</sup> in his medical reports from these hospitals, and he has left nothing to be added to his exposition of their value and import. I have always considered that exposition to be one of those great addenda to medical science which mark, as it were, a period in our acquisition of standard

<sup>a</sup> *Vide* Dublin Medical Journal, Vol. xvii., p. 268.

knowledge of a disease, and which are therefore well known to all true physicians. I would, therefore, have contented myself with a mere allusion to the existence, or otherwise, of these phenomena, did I not find the merit of this diagnostic discovery lately attributed to M. Trousseau.<sup>a</sup> It is to be presumed that M. Trousseau was ignorant of Professor Greene's researches, which were published in 1840, whereas the first case from which M. Trousseau drew the same deductions did not occur until 1843.

I now determined to keep the wound open continually by means of a drainage tube, the free extremity of which lay in a small vessel fitted to the shape of his chest, which he wore continually, and so escaped the necessity of being confined to bed.

For some days the average quantity of matter drawn off in this way was about four ounces. This gradually reduced; and when he left hospital, on the 6th of August, the quantity drawn off was not more than two drachms in the 24 hours. Still the tube could not be removed, for, on different occasions, when, from want of cleanliness, it became closed, he was always attacked with cough, loss of appetite, and other symptoms which told him that the purulent matter was reaccumulating; and these symptoms were invariably removed on the tube being readjusted. It was finally removed on the 6th of November, and he went to the country, and has remained perfectly well. The rapid increase in his weight was most remarkable.

The treatment by means of the drainage tube was eminently successful in this case. Its advantages seem to be—1st, that it prevents the accumulation of any large amount of fluid in the pleura; 2nd, that it does so, when properly introduced, by removing the fluid from the most depending part of the cavity; and, 3rd, that it removes the fluid by a slow but continuous process. It is obvious, therefore, that the tube may require a twofold or a single insertion into the cavity of the pleura. In ordinary cases, where the fluid presents at the upper part of the thorax, or where the upper part of the thorax is selected for the operation of paracentesis, then the drainage tube, being inserted at this point, ought to have its point of exit at the most inferior part; and this object can be well attained by the means pointed out in Professor Banks' communication in the last volume of this Journal. I may here take the opportunity of stating that, within the last few days, I have seen the subject of that very interesting paper, and he continues in the enjoyment

<sup>a</sup> *Vide Gazette des Hôpitaux*, Feb. 1., 1862.

of rude health. In other cases, like that of Halpin, an unusual variety of empyema may present at—or the operator may be able to select—the most inferior point of the chest, and then there will be no necessity for any second wound. In fact, for the success of the drainage treatment one essential point seems to be that the evacuation must take place from the lowest part of the chest; and I think it very probable that, even in those cases where an opening has been originally required into the upper part of the chest, when the counter-opening has been fully established the closure of the original wound may help to expedite the recovery.

I do not recollect to have ever before seen an empyema arising from an interlobular pleurisy which was distinctly recognisable during life, and conducted to a favourable termination. There was abundant proof that in Halpin's case the general cavity of the pleura was not affected, in the persistence of vesicular respiration, and in the absence of perfect dulness on percussion, at the postero-inferior portion of the lung; and the want of general dilatation or swelling of the side. The cessation of the purulent expectoration when the pleura was opened, the absence of evidence of pleuropneumonic fistula, and the information gained by *sounding* the interior of the chest, proved that the pus had not its source in a pulmonary abscess.

I need not dwell upon the exact anatomical position of this intrathoracic abscess. Similarly situated collections of matter have been often described as abscesses in the lungs; but careful dissection shows them to be bounded on all sides by serous membrane; “the space which they occupy being,” as Hodgkin concisely explains it, “shut up by previous old adhesions.” There is, perhaps, no more interesting case of inter-lobular pleurisy on record than that described by Andral,<sup>a</sup> in which the disease proved fatal, unrecognized, and with all the rational symptoms of pulmonary phthisis.

I consider this case to be a valuable supplement to the somewhat similar one so admirably detailed by Dr. Thorpe in the 34th volume of this Journal.

### CASE III.—*Pleuritis, with Effusion; Tubercular Pleurisy, with Phthisis Pulmonalis.*

James Murphy, a tall emaciated man, 27 years of age, having been out of health for several months, was, about the middle of

<sup>a</sup> See Spillan's Transl. Andral's *Clinique Medicale*, p. 580.

September, seized with more severe symptoms of local disease in his chest, viz., rigors, dyspnea, cough, and fixed pain in his right side. He went into an hospital, and remained there until the end of November, when he was discharged, not feeling himself much improved. He remained at home until the 12th of December, when, finding his strength rapidly declining, he sought admission into the Whitworth Hospital. I examined him carefully on the following morning, and had no difficulty in concluding that he laboured under effusion into the right pleura: there was well-marked dulness over all the right side, without any pure vesicular murmur; and in some parts there was a total absence of any form of respiratory sound. The constitutional symptoms were of a very alarming nature; the emaciation was still progressing; his debility extreme; his pulse 120, very small, weak, and compressible; his tongue dry, and his restlessness and want of sleep most distressing. Under these circumstances the point for consideration seemed to be, whether it would be right to propose to the patient the operation of *paracentesis thoracis*. With this view we investigated chiefly the following two points:—1st, the nature and amount of the fluid effused; and, 2nd, whether the pleuritic effusion was an idiopathic disease or a complication and secondary affection.

On the first point we had the following amount of evidence:—Although percussion elicited a dull sound over all the right side of the chest, the dulness did not transgress the median line, nor was there any displacement of the neighbouring organs; the liver was not depressed, nor were the intercostal muscles bulged out or paralysed; the diaphragm acted freely, and the patient lay frequently, and for a considerable time, on his left side; and, on measurement, the right side was only half an inch larger than the left at the time of a full inspiration; the expectoration was very scanty and viscid, containing very little purulent matter, and there were now no chills or shiverings complained of; there was distinct frottement audible in front, over the cartilage of the fourth rib; and posteriorly and laterally bronchial breathing (not very intense) and bronchophony were audible over about half the side. We came to the conclusion, therefore, that the fluid effusion which existed was not purulent, but serous, and that it did not occupy more than half the right pleura. We now sought for information on the other point—how far the pleurisy, such as it was, could be looked on as a primary disease—and we found that the respiration through the left lung, particularly its upper portion, was continuously interrupted or

*saccadé*, and that there was occasionally a crepitating râle to be heard; also, that although percussion elicited a clear sound all over this side, yet that on the fullest inspiration the side only expanded one-eighth of an inch, and that the respiratory process was carried on chiefly by the diaphragm. Connecting these physical signs with those already enumerated as existing in the right side, we inferred that the respiratory distress was not to be attributed altogether or principally to the pleuritic effusion. For these reasons, therefore, the operation of paracentesis thoracis was not proposed. He was ordered a large quantity of wine and nutriment, the side to be covered with an emollient anodyne poultice, and iodide of potassium, ammonia, and bark to be administered internally. The constitution seemed to have lost all power of rallying, the debility rapidly increased, and, without any accession of illness, the patient died on the 15th.

*Post mortem* examination showed that the right pleura contained four pints of pale serum. The lung, reduced to about half its normal size, was covered with a dense, firm, organized, false membrane, nearly a quarter of an inch in density, and which in some places seemed to have attained to various degrees of organization. Intimately adherent to the serous covering of the lung, it became more easily detached more externally; and the outer layer, which was very rough and sponge-like in appearance, was traversed in all directions by vessels carrying red blood, and had also a quantity of soft lymph lying on it in many places. There were also to be seen throughout this false membrane, a number of small, opaque, round granular spots, which were evidently small scrofulous tubercles, developed in the false membrane. A section of the lung showed that, although it had evidently undergone great compression, a considerable quantity of blood still circulated through it; and there were still to be seen several distinct scrofulous tubercles scattered through its substance. The left lung did not collapse, from having assumed a more or less emphysematous condition. A small quantity of bloody serum was found in the cavity of the pleura, and the serous membrane was closely studded all over with miliary tubercles, hard, and of a grey colour, and about the size of small pin's head; while sections of the lung revealed various tubercular masses in its upper and middle portions. These tubercular masses, about the one-eighth of an inch in diameter, were evidently formed by a congeries of small tubercles coalescing; they were rather hard and gritty, and did not seem to have the least tendency to

softening. The heart was small, and was undergoing fatty degeneration; its right cavities were completely empty; the abdominal viscera were healthy, except that the peritoneal surface of the liver was universally opaque from the very free development of miliary tubercles all over it; on the peritoneal surface of the spleen they were also copiously developed.

The chief point of interest in the above case was the very practical question as to whether the operation of paracentesis thoracis for the relief of the urgent symptoms was advisable or not. I have already assigned the reasons why, in this particular case, I did not recommend it; but the question in the abstract, in similar cases, must be very much determined by the views adopted as to the order of succession or supervention of the two diseases, the tubercular deposition and the pleuritic inflammation.

This subject may be approached under two very different aspects: 1st. The propriety of thoracentesis in cases of pleural effusion in which we dread the supervention of phthisis; and, 2nd, its propriety in cases like the present, in which tubercular disease is already pronounced; or, in other words, adopting the division of Rilliet and Barthez, we are to consider the propriety of thoracentesis in pleurisy of the phthisical, and in tuberculization of the pleura.

From the fact of tubercle so often succeeding pleurisy in a scrofulous subject, Trousseau draws an argument for the early performance of thoracentesis in cases where the effusion is considerable; and in a communication on this subject, made to the Pathological Society, by Mr. Adams, in his usual clear and lucid manner (See *Trans. Dub. Path. Soc.*, Vol. II., p. 82), he favours the proposition of early operation, on the ground that we may thereby reasonably hope to prevent the development of tubercle in the opposite lung; and both these authors adduce the same proof of the pleurisy being the primary disease, and to which the phthisis succeeded, viz., that the lung of the originally affected side was afterwards found free from any tubercular development. Another reason which has been assigned for early operation in such cases is the fact, as observed in patients of this peculiar diathesis, that the solid effusion is to that amount, and of that nature, to retard considerably, if not prevent altogether, the process of absorption. This is, no doubt, the case in some instances; but in many cases of consumption, which commence as cases of pleurisy with effusion, the fluid effusion has been absorbed within a reasonable time, and a universal frottement has proved the lung to have fully expanded, and yet the phthisis has

rapidly progressed. It is not long since Dr. M'Dowel and I attended such a case—a young gentleman, about 19 years of age. The effusion set in with frightful rapidity, and caused proportional dyspnea and suffering; but on the 10th day the fluid began to diminish and gradually subsided. In a few months pulmonary phthisis was fully developed in the opposite lung, and rapidly proved fatal. I am therefore of opinion, with Trousseau and Louis, that these effusions are often but the evidence of the tuberculous diathesis; and that, therefore, while we ought to remove the fluid effusion, if it does not yield to remedial measures within a very reasonable time, we must not expect that we can thereby prevent the extension or development of pulmonary phthisis.

But when we are called to treat a pleuritic effusion in which we have reason to conclude that tuberculous disease is already established in the lungs, thoracentesis should not be performed unless the effusion be excessive. There are two reasons why the operation should not be successful in these cases:—First, the lung cannot expand, being bound down by the mixed fibrinous and tuberculous exudation which uniformly invests it, preventing indeed the further development of tubercle in the lung, but itself proving no less fatal. But, secondly, these heterologous deposits will, if the fluid effusion be removed, still continue to act as sources of irritation and still keep up a continued secretion. The complication of phthisis with pleuritic effusion would seem, therefore, to give a direct negative to the proposal of thoracentesis, while, in the scrofulous subject, even before the development of tubercle in the lungs, the operation cannot in general be looked on as a remedial measure.

At the present day I feel that the danger is rather that the operation will be performed in cases where it will prove injurious, than that it will be neglected in cases in which it is advisable. Circumstances sometimes warrant the performance of a desperate operation that life may be prolonged, even for a few hours; but, under ordinary circumstances, we should have a well-grounded hope of a recovery, more or less perfect, before we venture to bring into disrepute an operation which, fitly used, may save the lives of many, and when rashly adopted will surely add to the suffering which already exists. Paracentesis thoracis is not the very trivial matter which Trousseau would have his readers to believe, and unquestionably it does not admit of the universal application to all cases of pleuritic effusion with which he would invest it.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Clinical Memoirs on Diseases of Women.* By ALFRED H. M'CLINTOCK, M.D., F.R.C.S., Late Master of the Dublin Lying-in Hospital, &c. Dublin: Fannin & Co. 1863. 8vo., pp. 435.

THE Dublin Lying-in Hospital, for the establishment of which we are indebted to Dr. Bartholomew Mosse, was the first institution of the kind erected in the British dominions, and has been the means, in a great degree, of securing to the Dublin School of Midwifery a world-wide fame and reputation, not only for the excellence of the teaching it affords, and for the valuable precepts of practice it inculcates, but for the advances in obstetric science that its members have made. Not a little of this success is due to the rule of the hospital that limits the period for which the Mastership can be held to seven years, and requires that each Master shall have previously served for three years as Assistant-master. The present worthy occupant of the office of Master is the sixteenth in succession from Dr. Mosse, the founder of the institution; an illustrious chain, to enumerate whose services and contributions to obstetric science would be to recapitulate nearly all the important advances that have for many years been made in this department of medicine; and the author of the book before us, whose period of office has so recently expired, has, as the readers of this Journal well know, ably maintained the character acquired by the institution under his predecessors.

Some of the former Masters of the Hospital have, either themselves or by their assistants, given us reports of the Midwifery department; but Dr. M'Clintock, in the present volume—perhaps from having already published, in conjunction with Dr. Hardy, a report of this department during his assistantship under Dr.

Johnson—breaks new ground, and gives us the first volume the hospital has afforded on the diseases of women treated in the wards devoted to their reception; or, as he calls them, the “gynecological wards.” The first volume, we say—but, at the same time, we are not so ungrateful as to forget the valuable papers and essays previously published from time to time on the same subjects, both by Dr. M’Clintock and other Masters and Assistant-masters, and which have, for the most part, appeared in our own pages.

The work before us is based on clinical observation, aims at clinical utility, and is illustrated by original clinical histories; and the primary object of its publication has been to embody some of the fruits of the author’s eleven years experience in the gynecological wards of the Lying-in Hospital, while he has not, he says, been unmindful of the writings of other authors on this branch of medicine. It consists of sixteen “Memoirs,” many of which have already appeared in this Journal, but have all been re-written, and had such additions made to them as extended experience and reflection may have demanded; and are all of a pre-eminently practical character. The first treats of “Puerperal pelvic Cellulitis;” the second of “Pelvic Inflammation and Abscess in the Non-puerperal State;” then we have memoirs on “Procedentia Uteri and the use of Pessaries;” “Inversion of the Uterus,” acute and chronic. “Fibrous Tumours of the Uterus;” “Polypus of the Uterus;” “Tumours of the Vagina,” and “Tumours of the Vulva” are next considered; then “Pelvic Hematocoele” and “Pudendal and Uterine Hematocoeles.” A memoir on “Stone in the Bladder” follows, and then we have memoirs on “Mammary Inflammation and Abscess,” on “Secondary Hemorrhage after Parturition,” on “The Semeiological value of the Pulse in Child-bed,” on “Dropsy of the Ovum,” and on “Cystic Disease of the Ovum.” These memoirs are illustrated by 35 beautifully-executed wood-cuts, all of which, with the exception of one—copied from a plate by Crosse—are from original drawings by Mr. Connolly, of cases under the author’s own care, and done with the fidelity and execution that distinguish that artist; and they are engraved by the skilful and practised hand of Mr. Oldham.

The memoir on pelvic cellulitis is founded on the observation of 70 cases; and, with a view to fully elucidate the course and history of the disease, 13 of the most interesting are given at length. The true anatomical seat of this disease is still involved in obscurity, as, from the disease so seldom proving fatal, opportunities for inves-

tigating it are rare. In the 70 cases under the author's care, two only terminated in death, and in each of these the immediate cause was dysentery, caused by the abscess opening into the colon. The disease manifests the same tendency to attack primiparæ that other puerperal affections do; and though rarely resulting from puerperal fever, was, in many of the cases, evidently the effect or the result of attacks of metritis, or metro-peritonitis, and was more frequent in some seasons than in others, and especially common when there was a tendency to puerperal fever. The first evidences of it generally present themselves when the patient gets up and begins to go about, though the disease may have been going on silently and insidiously for some time, showing the importance of the rule laid down by Dr. M'Clintock, to examine the iliac regions day by day, as regularly as to feel the pulse, in all cases of convalescence from uterine or peritoneal inflammation. As a general rule, when originating out of parturition, it does so within four or five weeks, and the age of the woman, the sex of the child, and whether she suckle it or not, do not seem to have any influence in its production.

When pelvic cellulitis occurs in a primary form, it generally commences with a rigor, succeeded by local pain, general febrile disturbance, and a tumour, which is one of the most remarkable features of the disease. The tumour forms sometimes with astonishing rapidity—so much so, that Dr. M'Clintock thinks its production can only be ascribed to serous infiltration—œdema, in fact, of the loose cellular tissue; as mere hyperemia of the affected part could not adequately account for it, and the short period within which it takes place almost excludes the possibility of its depending on changes in the solid tissues of any of the pelvic organs. In general, the tumour is discoverable by external examination; but in a few instances is not to be detected except by vaginal exploration, and without this its relations to the cervix and adjacent parts cannot be ascertained. In 27 of his cases the tumour was situated in the right iliac region, and in 34, in the left; whilst in three, both sides were successively engaged. In eight cases there was more or less suprapubic tumour, accompanied, in most of them, with iliac tumour also.

When the disease occurs primarily, that is, without preceding hysteritis, or metro-peritonitis, it generally makes its onset with rigors and fever, but this is a rarer form of the affection than that which follows as an epi-phenomenon of these diseases, when it commonly begins in a very insidious latent manner; and in all

forms, but this latter especially, its duration may extend over some weeks or months, and it may even become so chronic in its character as to be liable to be mistaken for an ovarian tumour. Of 70 cases, 37 ended in suppuration, with discharge of pus; 24 of these burst, or were opened externally, viz., 20 in the iliac region, 2 above the pubes, 1 in the inguinal region, and 1 beside the anus. There were 6 in which the discharge occurred per vaginam, 5 by the anus, and 2 burst into the bladder; and Dr. M'Clintock is, notwithstanding the statements of Becquerel and other writers, very decidedly of opinion, that the most favourable way for the escape of the matter is externally, in the iliac or supra-pubic regions.

In the treatment of the acute stages, Dr. M'Clintock chiefly relies on moderate leeching, poulticing, and fomentations; he does not think the benefit of internal leeching, as recommended by some authors, compensates for the inconvenience attendant on it; and although he recommends the administration of mercury, he would not push it to ptyalism. In the chronic stages he finds small doses of the bi-chloride of mercury serviceable; and in some cases the local use of camphorated mercurial ointment, strong tincture of iodine, and blisters; but these latter he regards as of doubtful utility, an opinion in which, however, we cannot fully concur, for where they do not produce strangury, we have found them to be very beneficial. When suppuration has taken place, if the abscess point externally, an artificial opening is desirable when the matter is near the surface; but it is not always necessary to wait till the skin becomes adherent to the tumour, though it is best to do so generally; and when the abscess tends towards the vagina, and is prominent, distinctly fluctuating and causing distress, the bistoury may be used; but, as a general rule, Dr. M'Clintock thinks it better to let it burst of itself. The most important point in the treatment is, however, rest—physiological rest, as it has recently been called—rest, not only from the exercise of the functions of the parts, but also from all movements, so far as possible, of the contiguous parts; the essence of *time* and tincture of *patience*, as we have long been in the habit of explaining to our patients, are all important in these cases; and on this point Dr. M'Clintock speaks, in the following passage, with all the authority of matured experience:—

“The first thing is to impress on the patient and her friends that recovery can only take place very slowly; that she, therefore, must have patience, and be willing to observe the strict confinement to the horizontal

position, which is the most important part of her management, and without which all treatment will prove nugatory. These cases almost always issue in the recovery of the patient, but they extend over a long period—from three to four months being their average duration. Until resolution has taken place, or, at all events, until the tumour has become chronic, in the fullest sense of the word, the patient should observe a recumbent posture. I am anxious to urge this point, again and again, on the attention of the practitioner, for I do not think its importance is sufficiently dwelt upon by writers; and it has been my lot to witness sad, nay, even fatal, consequences from inattention to it."

In the memoir on "*Pelvic inflammation and abscess in the non-puerperal state*," 12 cases are recorded, of which 6 were primary or idiopathic; and 6 secondary—three of them to a fibrous tumour of the uterus, 2 to uterine polypus, and 1 to abdominal inflammation. All the idiopathic cases, except 1, recovered—3 of them having suppurated. Of the secondary cases three (of which 2 were fatal) occurred in connexion with fibroid tumours of the uterus; 2, also fatal, with uterine polypi, which had had a ligature applied to them; and 1 other fatal case ensued on an attack of fever of some kind; all of them were insidious and dangerous in their commencement; and of the 7 fatal cases 3 terminated in consequence of an abscess opening into the peritoneum, a termination that Dr. M'Clintock has never seen in the puerperal form of the disease.

The third memoir is on "*Procidentia uteri, and of the use of pes-saries*." One of the cases recorded is so remarkable that we give it in full:—

"Case 1.—*Procidentia uteri in seventh month of pregnancy.* A woman, aged 35, was admitted into the gynecological department of the Lying-in Hospital, 18th October, 1855. She applied for admission on account of a complete procidentia of the womb, with considerable excoriations of the os. On examining the tumour I discovered that the body of the organ was much enlarged; the cervix was full and expanded, and within it was felt a hard substance having much the feel of a fetal head. The possibility of her being with child now suggested itself to my mind, and prompted further investigation, the result of which was the admission that she was more than six months gone with child, (her second). The head and shoulders of the child were literally external to the pelvis. The uterus was gently replaced, and she was confined to bed. Four days afterwards labour came on, and she was delivered in six hours of a living girl, which weighed four pounds, 5 ounces, avoirdupois, and measured

seventeen and a-half inches in length. She recovered very well, and was kept in the horizontal position for some weeks, when she went home apparently cured of the prolapse."

Dr. M'Clintock warmly recommends the use of pessaries in suitable cases, considering the objections that have been urged against them as applying rather to their abuse than their use, and has seen cases where the displacement was permanently cured by their judicious use, the size of the instrument being from time to time reduced till its diameter about equalled the normal size of the vagina, and it could, at length, be safely dispensed with.

For the different forms of displacement, especially as occurred in hospital and dispensary practice, Dr. M'Clintock generally used the globe and disk boxwood pessaries, which he thinks, for the ordinary run of cases, will be found at least equal to any others, and to be preferred on account of durability and cheapness; but he gives two valuable cautions as to their use, viz.: that in the globe pessaries the string should not be attached to the operculum that closes the opening, through which the instrument was hollowed out by the turner, lest this should become loose, and get detached; and that in the disk the central opening should not be more than three-eighths of an inch in diameter, lest the cervix should get incarcerated in it. For the removal of the globe pessary, when the string is broken, he recommends and figures a simple instrument, being nothing more than a strong cork-screw, which he passes into one of the holes of the pessary; and he has found the same instrument of great service in drawing down polypi and other tumours of the uterus.

The Indian rubber disk pessary Dr. M'Clintock has found very satisfactory; it is, he says, light, soft, easy of introduction and removal, but not very durable. Air pessaries, with a tube for inflation, as well as those with stems, he has not found satisfactory, from the irritation they cause at the vulva; and the sponge so highly recommended by some writers he thinks objectionable, on account of the care and trouble necessary for keeping it clean. The great advantage of this form is the ease with which it can be removed and introduced by the patient herself—no small recommendation to a young married woman; but all the advantages it possesses in this respect, are, in our opinion, to be obtained, though in another way, by the use of Hodges' lever pessary, which is not mentioned by the author, for it may be worn constantly, even by young married

women living with their husbands, and without inconvenience. We have used this instrument, to the exclusion of all others, for a considerable period, and found it most satisfactory, and when properly chosen and placed it affords great comfort, not only correcting prolapse and procidentia of the uterus, but also retroversions and the various forms of prolapse of the vagina.

The memoir on "Inversion of the uterus" is one of great importance and value; it is chiefly occupied with chronic inversion; and three cases are detailed, in each of which the uterus was successfully removed—in the first by ligature, by Dr. Johnson, when Dr. M'Clintock was assistant in the hospital, and in the others by the author himself, with the ligature and *écraseur*. The ligature was applied for 48 hours in one of these, and for 72 in the other, before using the *écraseur*, with a view not only to the avoiding of all risk of hemorrhage, but to the securing of adhesion of the peritoneum, and preventing the laying open of its cavity.

Detailed accounts of these cases have already appeared in our pages, so that it is unnecessary to make an analysis of them on the present occasion; we may, however, add a fact in respect of acute inversion illustrative of Dr. M'Clintock's statement that when the misplacement is rectified the capability of conception is restored, and showing the further fact that there is not necessarily a liability to its recurrence in subsequent labours. The late Professor Montgomery published, a short time before his death, an account of a case of acute inversion to which he had been called, and where he succeeded in reducing the tumour; this lady has since been under our care in two labours, and, has not only conceived, but gone to the full period of pregnancy and been delivered, and made good recoveries, after easy and perfectly natural labours.

The fifth and sixth memoirs are devoted to "Fibrous tumours and polypi of the uterus." If, where all is so excellent, we might single out any part for special commendation it would be these chapters, for they constitute most valuable contributions to medical literature. In that on fibrous tumours the whole history of these growths is traced—their frequency of occurrence, varieties, size, and number; the transformations they undergo—such as calcareous degeneration, softening and elimination; and cancerous degeneration, the occurrence of which the author doubts, believing that the cases in which this has been thought to have taken place were instances rather where the tumour ulcerated, broke down, and sloughed, coming away in a highly putrid semi-dissolved state, and

the patient exhibiting a sallow wasted aspect, with a degree of irritative fever very like cancerous cachexia. The occasional detachment and transplantation of these tumours is also fully explained.

The symptoms are next detailed, and in two classes—first, the direct, as pain, menstrual disorder, hemorrhage, and watery and mucous discharges from the vagina, and then those resulting chiefly from mechanical pressure—such as cramps, dysuria, difficult defecation, prolapsus, piles, œdema of the leg, &c. Before discussing the treatment of fibrous tumours their natural history, or the course they take when not directly interfered with, is considered. Though no case of it has come under his own observation, Dr. M'Clintock admits, on the authority of cases described by Sir Chas. M. Clarke and Dr. Rigby, the possibility of these tumours being removed by a process of atrophy or absorption; separation and complete detachment of the tumours from the uterus, as may happen to the pediculated sub-peritoneal and sub-mucous forms, and their calcareous transformation occasionally take place; and also softening, disintegration, and discharge by the vagina in detached fragments and in a semi-fluid state. In one case the tumour melted down and formed an abscess which was discharged by the rectum. Fibrous tumours are also sometimes expelled during parturition; and these, with arrested growth, and slow passive growth unattended with symptoms, may be called the favourable terminations of the disease. On the other hand, they may destroy life by peritonitis, exhaustion, or hemorrhage.

Many practitioners regard fibroid tumours as a disease which does not admit of cure, and are content with merely palliative treatment; Dr. M'Clintock, however, regards their cure as quite within the range of possibility, and thinks it should always be aimed at when the circumstances permit. The iodine treatment, so highly spoken of by Ashwell, he has not much confidence in; he has found the bromide of potassium more useful, and speaks favourably of the waters of Kreuznach, whose chief deobstruent is bromine. The chloride of calcium of the Dublin Pharmacopia he also speaks highly of, and gives a case in which, after the use of half-drachm doses, three times a day for two years, of the *liquor calcei chloridi*, in combination with the tincture of the muriate of iron, the tumour disappeared. Leeching, and the application of strong mercurial ointment to the hypogastrium or to the os uteri, may also be used with advantage. For the treatment of the hemorrhage, Dr. M'Clintock enumerates many styptics, but says he gives the foremost

place to gallic acid, alum, tincture of Indian hemp, and iron, and states very truly that one hemostatic will not answer equally well in all cases, and that no reason can always be assigned for this variability of effect. In our own hands the tincture of Indian hemp has been very successful, and we always give it the first trial as being less likely than most other styptics to interfere with digestion. The sesquiperhydrate of iron we have also found very useful; but there is no styptic we find more worthy of reliance than turpentine, though, from its disagreeableness it is only when others fail that we have recourse to it. Dr. M'Clintock reiterates the favourable opinion he expressed in our own pages some years ago as to the power of mercury as a hemostatic, and alludes to the case published by Dr. Tanner, in the 3rd volume of the *Transactions of the London Obstetrical Society*, and fully noticed in our review of that volume, where very obstinate hemorrhage was, on several occasions, controlled by its use. The case is important as showing that the good effects of the mercury were obtained as soon from the bi-chloride of mercury, in doses of the sixteenth of a grain, as from calomel given to the extent of producing salivation.

As to the surgical treatment, this consists—1st, in pushing the tumour up out of the pelvis when it is inducing injurious pressure on the organs in that cavity; 2nd, in attempts to prevent the occurrence of the repeated hemorrhages, for which Mr. Baker Brown, M. Nélaton, and Dr. M'Clintock have all, independently of each other, made the observation that a free incision of the os and cervix uteri is generally very efficacious. Several cases are given in which this plan of treatment was adopted. Atlee's statement, that the hemorrhage may be "invariably arrested instantaneously" by making a free incision into the most prominent part of the tumour, is also considered; but Dr. M'Clintock does not seem to have tried this plan or think it so certain of success as Dr. Atlee calculates on. The curative treatment is next alluded to, but none of the proposed plans seem to have obtained the full approbation of the author.

We pass now to the memoir on "Polypus of the uterus," which is equally complete and excellent with that which we have just considered, but our space will not allow us to analyze it fully. For the removal of these growths, Dr. M'Clintock prefers torsion for small polypi, or rather for cases where the pedicle is small—not thicker than one's little finger—and he gives drawings of improved instruments for this operation. For excision or ablation, he

recommends the *écraseur*, where it can be used, because of the greater security it affords against hemorrhage; and of the use of the ligature—so highly lauded by Dr. Lee, in the paper reviewed in our last number—he says he believes its use alone, as a means of extirpating uterine polypi, is destined ere long to become nearly obsolete; though in the case of a very large polypus, he would, as in a case that is detailed, apply a ligature for a period, say 48 hours, and then excise the tumour.

The seventh memoir, on “Tumours of the vagina,” and the eighth, on “Tumours of the vulva,” are, we believe, the most complete essays on these subjects extant. We have, however, so recently presented our readers with papers from Dr. M’Clintock’s pen on the same subject that we pass them over on the present occasion, and hasten to the ninth memoir, on “Pelvic hematocele.”

The lesion, to which Dr. M’Clintock applies the term *pelvic hematocele*, consists in an extravasation of blood into the pelvic cavity, either within the peritoneum, or external to this sac. The names *peri-uterine* and *retro-uterine* hematocele have been given to it; but, as none of the blood may lie behind the uterus, and is very rarely all round it, and, as the blood has no more particular relation to the uterus than to any other pelvic organ, Dr. M’Clintock thinks it better to use the term *pelvic hematocele*, which implies, simply, an effusion of blood within the pelvis, and to confine the term *uterine hematocele* to extravasation of blood into the substance of the uterus; and it is to be remembered that, though the effusion is spoken of as if it constituted the disease; it is in reality only a symptom or effect of some pre-existing pathological condition.

The disease is not of extreme rarity, though only recently fully described. Ruysch recorded a *post mortem* examination in 1691, of a woman who died whilst menstruating, where blood was found in the peritoneal cavity; but we stand chiefly indebted for the first full accounts of it to M.M. Recamier, Velpeau, and Bernutz, and within the last 12 years it has attracted much attention, both at home and in France. The hemorrhage may take place within the peritoneum, or external to it, and the intra-peritoneal may be *encysted*, or circumscribed by the adhesions of the peritoneum, or *non-encysted*, the extravasation taking place rapidly, causing a large swelling, and endangering life by the shock or amount of effusion. The *extra-peritoneal*, or *sub-peritoneal* form is less dangerous than the other. Some pathologists, indeed, doubt the occurrence of this latter variety; the majority, however, recognize the two forms, and

some even affect to be able to diagnose them during life. Dr. M'Clintock enumerates the sources of the hemorrhage and the symptoms, as follows:—

“The *sources* of the hemorrhage would seem to be various; in the first place, the blood may be discharged from the Fallopian tube, being either an exhalation from its mucous membrane (Trousseau), or coming through this duct from the interior of the womb. In the latter case it is not necessary that occlusion of the os uteri should exist. Retention of the menses has also led to bursting of the oviduct, and consequent formation of pelvic hemothecæ. *Secondly*, the blood may come from the ovary itself, at the time of spontaneous ovulation, either in consequence of disease of the organ, or of unusual hyperemia. Dr. Tilt and Dr. Genouville argue strongly in favour of this source of the hemorrhage, and the latter physician founds upon it a distinction, very useful, I dare say, in a practical point of view, viz., *catamenial* and *accidental* hemothecæ, the former being the more frequent, and more liable to recurrence in the same individual. A modification of this theory has been put forward by M. Gallard, who supposes that very many cases of pelvic hemothecæ are due to the pressure of an ovum which had missed the oviduct and dropped into the peritoneum; so that, in fact, they were examples, strictly speaking, of extra uterine gestation. *Thirdly*, Dr. Puech has drawn attention to laceration or rupture of the utero-ovarian vascular plexus, as a cause of the extravasations of blood. *Fourthly*, the hemothecæ may be produced by a simple sanguineous exhalation from the peritoneum, thus being in some degree analogous to the disease known by the name of hemorrhagic pleurisy. M. Tardieu has described a few cases which would seem to be of this kind.

“*Lastly*, the intra-peritoneal effusion may be but one of the effects of a general hyper-secretion of blood from the genital organs; a species of hemothecæ to which M. Bernutz applies the epithet ‘metrorrhagic,’ and which is accompanied, at the time of its formation, by an excessive menstrual discharge from the vagina. It is important to observe, that pelvic hemothecæ may be produced under the most opposite conditions, viz., in the complete absence of menstrual discharge, and where this is unnaturally profuse. In the majority of cases that have been put on record, the hemorrhage has come from the ovarian vessels, at the menstrual epoch. The quantity of blood which has been effused in some of the instances was very great. Of this I shall have occasion to mention a striking example.” . . . . .

“The leading *symptoms* which present themselves after the occurrence of this accident are, hypogastric pain and tenderness with febrile action, succeeding to menstrual derangement, sometimes amenorrhea, but more

frequently menorrhagia preceded, perhaps, by a temporary suppression of the menstrual discharge. A tumour suddenly develops itself in the hypogastric or iliac region, or behind and partly below the neck of the uterus. At first this tumour is soft and fluctuating, but, at a later period, has more firmness. Tenesmus and irritability of the bladder are frequently present also. The character and intensity of the symptoms will mainly depend upon the mode of inception which the disease exhibits. Studied from this point of view, pelvic hœmatocele may be said to have three forms, or, to speak more correctly, three *modes of invasion*.

"In the *first*, and most severe form, the onset of the symptoms is sudden and overwhelming. The patient is abruptly seized with abdominal pain and rigor, succeeded by utter prostration of strength, cold extremities, pallor of the countenance, which is anxious and pinched; the pulse is rapid weak, and thready, and the general surface of the body becomes deadly pale. In fact, the patient presents all the symptoms which characterize intense nervous shock, with the addition of violent cramp-like pains in the lower belly. The danger to life, under these circumstances, is imminent. The amount of sanguineous effusion in this class of cases is generally very large, or attended by laceration of some of the pelvic structures.

"*Secondly*, there is a class of cases where the seizure, though plainly marked, is yet unaccompanied by symptoms so alarming or so severe as those just described. More or less rigor, abdominal pains, and faintness are present, but not in such degree as to menace life, or to indicate any immediate danger. We might justly term this an acute invasion, or acute form of the disease; whilst, for sake of contra-distinction, the former might be called the intense form.

"*Lastly*, there is a sort of chronic form, the symptoms being developed very gradually, and in succession. These are cases where the diagnosis is beset with most difficulty, and there is a great liability of confounding the disease with pelvic abscess, or ovarian tumours. In each of these forms the symptoms I have traced belong to the initiatory stage, and attend upon the extravasating of the blood. It is possible, therefore, as experience has amply proved, for the same case to exhibit two of these groups of symptoms. In Case 1, for example, there were, undoubtedly, two attacks, or two successive effusions, the one characterized by chronic, and the other by acute symptoms. In Dr. Madge's case, to which allusion will presently be made, there were also two attacks at an interval of some days; the first attack was an acute one, and in the second attack the symptoms might justly be referred to the first or intense form of invasion. It may be laid down, in a general way, that the ulterior course and symptoms of the disease will take their character from its mode of inception."

On closely analysing the symptoms they are found to be those of

peritonitis, more or less acute, of the lower belly; and along with this the rapid development of a tumour behind the uterus, or in the hypogastrium, and commonly in both situations. The peritonitic symptoms are easily enough recognized, and the tumour is generally discoverable on superficial examination, but whether its contents be blood, serum, or pus cannot be positively determined by the most delicate sense of touch, and hence the importance of close attention to what Dr. M'Clintock calls the *commemorative* signs, and the order of their appearance; and the use of the exploring needle, may, when it can be used, afford valuable assistance. In the following passage the differential diagnosis is laid down with Dr. M'Clintock's usual clearness and distinctness:—

“The diseases with which it is most apt to be confounded are the following:—

- “1. Retroversion of the uterus.
- “2. Pelvic cellulitis.
- “3. Ovarian tumours.
- “4. Extra-uterine gestation, and
- “5. Fibrous tumours of the uterus.

“Now let us see what are the most reliable semeiological points of difference between pelvic hemothecle and each of these complaints.

“1. The sudden development of the tumour behind the vagina and the general pelvic uneasiness succeeding to this have caused pelvic hemothecle to be mistaken for retroversion of the gravid uterus. But the far greater severity of the symptoms in the former complaint, the absence of dysuria and of the signs of pregnancy, and above all, the information derivable from a very cautious use of the uterine sound, should always suffice to guard the practitioner from committing such a fault. If the symptoms at all favour the suspicion of pregnancy, of course the sound should not be employed. As retroversion is the more common accident of the two, the error most likely to happen—and which has happened even in skilful hands—is that of mistaking hemothecle for it.

“2. A more excusable error is that of confounding pelvic hemothecle with pelvic cellulitis; and there is sometimes a close resemblance between these complaints. In each of them there are symptoms of local peritonitis, with fever, and the formation of a tumour. Nevertheless there are some important points in the histories of the two cases wherein they differ. Cellulitis, for example, most frequently succeeds to childbed; the tumour is slow in its formation: is always hard at first, and at a later period may, or may not, become soft; it is most often situated in one or other iliac region, and very rarely behind the cervix uteri; and the febrile

symptoms always and distinctly precede the marked development of the tumour.

"This is just the description of case in which the commemorative signs must be taken in connection with the physical signs, to ensure accuracy of diagnosis. If the case has been under our observation from the commencement, little or no difficulty will be experienced in recognizing its real nature; but where it comes before us for the first time in the chronic stage, and that reliable or particular information as to its previous history is wanting; then, indeed, there may be ample cause for perplexity. MM. Nélaton and Bernutz,—both most experienced observers and very conversant with this disease,—have each, under the circumstances last mentioned, mistaken pelvic abscess, for pelvic hemocele. Nélaton punctured the tumour through the posterior wall of the vagina; an immense quantity of pus, not blood, was discharged, and the woman recovered. The other patient died, when an enormous collection of matter was found in the hypogastric and left iliac regions. This had formed a tumour extending up to near the umbilicus.

"3. Ovarian cysts of small size sometimes descend into the retro-uterine pouch of the peritoneum, and may by adhesions or otherwise become confined to this situation so that their dislodgment cannot be easily effected. With this state of things should any active inflammation be set up in the cyst or its immediate vicinity, a practitioner ignorant of the existence of the ovarian tumour, might be greatly puzzled about the true cause of the symptoms. A fluctuating feel in the cyst, and the absence of any hypogastric tumour might assist him to a right conclusion, and a few days' observation would probably remove all doubt. Practically this delay at arriving at a diagnosis could not be productive of harm, as the treatment in either case would be much the same. If it became a matter of importance to solve the question, this could be done at any moment with the assistance of an exploring needle. Professor Braun's experience leads him to regard exploratory puncture as the only absolutely sure means of diagnosing between ovarian tumours and pelvic hemocele.

"It is important to keep in mind, as bearing on the diagnosis, that in nearly every case a tumour is developed behind and below the os uteri, from the blood gravitating down into the pouch of Douglas. It is extremely rare for an ovarian cyst to hold precisely this situation. More generally it is to one side or the other, and tends to displace the uterus downwards, and toward the side of the pelvis opposite to that in which the tumour is developed.

"4. Rupture of the cyst in extra-uterine fetation is an accident which may be followed by a train of severe pelvic symptoms, in no way distinguishable from those of hemocele. The prognosis would be certainly much graver, as rupture of the gravid cyst is almost always followed by

death: but beyond this I do not see that failure to discriminate between them would be of any material consequence. As a general rule we might expect more alarming symptoms to supervene on the giving way of a gravid extra-uterine cyst; and if such symptoms developed themselves in a patient who had previously manifested well marked indications of pregnancy, the highest degree of probability would then exist that the case was one of extra-uterine gestation ending in rupture of the cyst.

"5. One unacquainted with the infinitely varying phases of disease could scarcely think it possible that any confusion of diagnosis could ever arise between fibrous tumours of the uterus and pelvic hematocele. Nevertheless serious difficulty may present itself on this head. M. Bernutz alludes to a case under M. Goupil at the Hotel Dieu, in which the differential diagnosis between fibrous tumour of the uterus and pelvic hematocele could not be established, so many features did the case possess in common with both these diseases. M. Malgaigne, and Professor Stoltz (of Strasburg), have each committed the error of mistaking a pelvic hematocele for a fibrous tumour of the uterus. Malgaigne actually proceeded to remove the supposed fibroid by enucleation, and with this intention made the preliminary incision of the os uteri, when the hematic cyst was opened and the true nature of the case brought to light. The patient died in eighteen days afterwards. It is important to note, that in each of these cases the retro-uterine tumour, caused by the effused blood, presented no exceptional physical character: it was soft and fluctuating as hematocele always is. M. Stoltz's patient also died, and the existence of the hematocele was discovered at the necropsy. So confident was he she had uterine fibroid, that he made her case the subject of several lectures on the disease of which she was supposed to be an example. For some time before the acute symptoms seized her, the patient of M. Malgaigne had several attacks of simple metrorrhagia; and this strongly corroborated the idea of a fibrous tumour being seated in the uterus; which tumour, it was supposed, had been the cause of the hemorrhage and of the pelvic peritonitis."

The medical treatment of these cases resolves itself into the treatment of the stage of shock or depression; secondly—that of reaction and inflammation; and thirdly—the chronic stage. Authorities are divided as to the propriety of surgical treatment—that is, as to the puncturing of the cyst; and on this point Dr. M'Clintock says, that with his present impressions he would not be inclined to resort to the trocar, unless urgent symptoms were manifested in consequence of the bulk or mechanical pressure of the tumour, and

not even unless it were in the chronic stage, an opinion in which we fully concur.

The next memoir is on pudendal or uterine hematocele—the latter term, as already explained, being restricted to cases where blood is extravasated into the substance of the uterus, and some important cases are detailed where alarming and even fatal hemorrhages have arisen from the rupture of the cavity into which the blood was first effused. With this brief notice we pass over this memoir, and also the one that follows it, to come to the twelfth, which is on mammary inflammation and abscess.

Though this may be considered rather trite and common-place, it will be found by all his readers that Dr. M'Clintock has succeeded in giving it much interest. Sore nipples, and not the retention of milk, he looks on as the great cause of mammary inflammation, without, however, asserting that it is the only one; and the most effectual way of preventing the disease is by the proper treatment of the nipples, above all, by giving them rest. The idea that the retention of the milk is the cause of mastitis is, Dr. M'Clintock says, a lingering figment of the doctrine so strongly held by Puzos and the leading authorities of his day, and even later, which ascribed all puerperal diseases to the morbid action of milk; and hence the "milk leg," &c., of this class of pathologists, whom, says Dr. M'Clintock, Meigs, with contemptuous sarcasm, calls "the milk men." Two cases are detailed by Dr. M'Clintock of complete obliteration of the nipple of one breast where the patient nursed from the other; and where, notwithstanding that the affected breast became full and distended with milk, it gradually resumed the condition it was in before delivery, the only treatment adopted being the application of a cere-cloth. We have had a lady under our own care, in five confinements, who, in childhood, had got one nipple destroyed by a burn, and who has nursed each time from the other, and without any inflammation of the obstructed breast arising; and such cases are not uncommon; and this, along with the rarity of inflammation where nursing is not attempted, should satisfy all that over-distention is not the main cause of mammary abscess.

"The bearing of all this on practice is obvious enough. Actuated by the notion that the retention of the milk is the grand source of mischief, we find nurses, and patients, and occasionally even doctors, using every means, natural and artificial, 'to draw the breasts,' and not deterred from doing so by the presence of a sore or inflamed nipple; indeed this

is always considered by patients as an additional reason for the more vigorous employment of these exhaustive measures, and the natural effect of them is, to insure the occurrence of what is so much dreaded. I have no objection to suction of the breasts to relieve or prevent over-distension, *provided the nipple be not sore*; if this be the case, however, our first care should be to give it complete rest, as there is more danger of inflammation being induced by the sore nipple, than originating from the presence of the milk; and as for the distension of the breast, good hand-rubbing, and the application of the cere cloth, will seldom fail to relieve it. Before ordering a breast to be rubbed, it is of the greatest importance to make sure that the hardness arises from simple lacteal distension, and not from incipient inflammation. Through inattention to this, I have seen bad abscesses produced, which might have been prevented."

When inflammation has attacked the breast, Dr. M'Clintock relies chiefly on leeching, cold lotions, and the internal use of tartarized antimony for its subdual. His experience of applications of belladonna does not confirm all the praises it has received; and when matter has formed he recommends late rather than early puncture, and the early use of strapping after the contents of the abscess have been discharged.

The substance of the remaining memoirs has already appeared in our pages. They are on secondary hemorrhage after parturition; on the semeiological value of the pulse in childbed; on dropsy of the ovum, and on cystic disease of the ovum. They are too well known to our readers to require commendation at our hands, and, like those that precede them, are most valuable contributions to medical literature.

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*On Recent Physiological Researches made in England.* By EDWARD SMITH, M.D.

1. *Experimental Inquiries into the Chemical and other Phenomena of Respiration, and their Modifications by Various Physiological Agencies.* By EDWARD SMITH, M.D. *Phil. Trans.*, 1859.
2. *On the Elimination of Urea and Urinary Water, in Relation to the Period of the Day, Season, Exertion, Food, Prison Discipline, Weight of Body, and Other Influences Acting in the Cycle of the Year.* By EDWARD SMITH, M.D. *Phil. Trans.*, 1861.

IF physiology and medicine are ever to attain the rank of exact

sciences they can expect to do so only on condition of accepting the rules that apply to those sciences—they must submit their facts to the rule and balance, and express them in the simple and intelligible language of number.

Dr. Smith's papers on the Excretion of Carbonic Acid and Urea are an attempt to conform to this rule, and therefore constitute a valuable addition to our knowledge.

Notwithstanding Dr. Smith's natural prejudice in favour of his own method of determining the daily excretion of carbonic acid, we cannot consider his method to be at all comparable in accuracy with that more recently practised by Pettenkofer and Voit, by means of which the whole daily quantity of carbonic acid is determined with precision.

With respect to the excretion of urea, he has been more successful, and it must be admitted, at the same time, less novel in his results.

We must, however, allow Dr. Smith to speak for himself:—

“Notwithstanding the number of valuable observations upon this subject which have been made since the publication of the first memoir of Lavoisier, there is but little which has been conclusively established. Of the causes inducing this, two have paramount importance—viz., the practice of deducing large from small quantities, in reference to a subject in which the quantities are ever varying, and the absence of any method whereby experiments could be repeated so frequently as to trace the changes actually proceeding during the inquiry. I have named these two because it is to correct them that I have directed my own observations.

“During the past year I had the honour to transmit to the Royal Society the results of an extended inquiry into the influence of various agents over the quantity of air inspired, a short abstract of which was published in the ‘Proceedings’ of the society. Since that period I have carried the inquiry further, and have determined the influence of those agents over the carbonic acid exhaled, as well as over other phenomena of respiration.

“The apparatus employed by previous observers for the determination of the quantity of carbonic acid contained in the expired air, has been one of the following description:—

“1st. That adopted by Prout,<sup>a</sup> Coathupe,<sup>b</sup> Vierordt,<sup>c</sup> and Boeker,<sup>d</sup>

<sup>a</sup> Thomson's *Annals of Philosophy*, Vols. ii. and iv.

<sup>b</sup> *Philosophical Magazine*, 1839.

<sup>c</sup> *Physiologie des Athmens*, &c.

<sup>d</sup> *Beiträge zur Heilkunde*, &c., 1849.

consisting of a bag or other vessel of known capacity, into which the air was expired during a certain time, and with a noted number of expirations; and a graduated tube, into which a portion of this expired air was passed, and the carbonic acid abstracted by potass, soda, or lime. This was adapted to experiments lasting a few seconds only at a time.

"2nd. A box of sufficient capacity to permit a man to be seated in it, and rendered air-tight, except at points which permitted the entrance and exit of air in given directions. The analysis of the expired air was made by the aid of potass. This was Scharling's<sup>a</sup> method, and by it he collected the products of the lungs and skin together, during a period not exceeding  $1\frac{1}{2}$  hour. It was not practicable to determine the quantity of air inspired, or to what extent the air was respired more than once; and it was not easy to prove how much carbonic acid remained in the box.

"3rd. The method of Andral and Gavarret,<sup>b</sup> by which a mask of the capacity of an ordinary expiration was placed over the whole face, and a continuous current of air made to pass through it into an analytical apparatus without respiratory effort.

"As the motor power was a vacuum produced in the receiver of the expired air, the duration of each inquiry was limited to about half an hour; and as all the air admitted to the mask and the receiver did not enter the lungs, it was not possible to determine the volume of air inspired."

Dr. Smith's own method of finding the carbonic acid excreted consisted in passing the expired air, over caustic potash, through a series of chambers, so contrived that no carbonic acid was allowed to escape, and such that no pressure was exerted on the expired air. His results are excellent during the period of observation, but as they did not include, and necessarily could not include, the whole 24 hours of the day, they can only be regarded, like those of previous observers, as approximations to the mean daily discharge of carbonic acid.

The following, according to Dr. Smith, are the daily quantities of carbonic acid excreted by the lungs, according to previous observers:—

Observers.	Subjects of Experiment.	Carbon expired in 24 hours.	
		oz.	gros.
LAVOISIER and SEGUIN . . . . .	One person.	$\left\{ \begin{array}{l} 10 \\ 5 \end{array} \right.$	$\left\{ \begin{array}{l} 4 \\ 7 \end{array} \right.$ French.
COATHUPE . . . . .	One person.	5.45	Avoirdupois.
VALENTIN and BRUNNER . . . . .	Several.	9.202	Avoirdupois.

<sup>a</sup> *Annales de Chimie*, Vol. viii., p. 478.

<sup>b</sup> *Ann. de Chimie*, Vol. viii., p. 129.

Observers.	Subjects of experiment.	Carbon expired in 24 hours. oz.	
ANDRAL and GAVARRET	Several.	{ 4.0068 12	} Avoirdupois.
SCHARLING	Several.	{ 4.4 8.464	
BARRAL	Skin also . . . . .	{ 8.5 12	} Avoirdupois.
LIEBIG	Many persons.	13.9	
VIERORDT	One person.	6.78	Avoirdupois.

In Dr. Smith's observations, an estimate is made for the 24 hours, from actual quantities determined from time to time during the greater part of that period, but the total quantity excreted in 24 hours was in no case actually weighed.

His calculated results are as follows:—

Mr. Moul.	Myself.	Prof. Frankland.	Dr. Murie.
Æt. 48.	Æt. 39.	Æt. 33.	Æt. 26.
5 ft. 9½ in. high.	6 feet high.	5 ft. 10½ in. high.	5 ft. 7½ in. high.
173 lbs. weight.	196 lbs. weight.	136 lbs. weight.	133 lbs. weight.
	Vital capacity		Vital capacity
	270 cub. in.		250 cub. in.
6.735 oz.	7.85 oz.	5.6 oz.	6.54 oz.

These results are estimated for perfect quietude; and the following is our author's determination of the influence of mechanical labour, which can scarcely be considered as very exact:—

"There yet remains for determination the influence of exertion. There are not on record any experiments in reference to the influence of exactly defined degrees of exertion, except that of raising certain weights through a given space in a given time; but Regnault, Vierordt, and others have ascertained in a general way that exertion increases the respiratory changes. I shall again refer to this subject at a future page.

"Whilst walking at two miles per hour during three-quarters of an hour, and carrying the spirometer, weighing 7 lbs., I expired 18.1 grains of carbonic acid per minute, and 25.83 grains when walking at three miles per hour. These quantities represent 1.85 and 2.64 times that of quietude in the sitting posture. Hence if three hours were spent in walking at two miles per hour, and one hour at three miles per hour, as is probably the case with the non-laborious class (2½ hours in the standing posture having been introduced into each of the two continuous inquiries above recorded when at rest), the addition to the daily quantity of carbonic acid evolved will be 2463 grains; and it is probable that thrice that quantity would be applicable to the really laborious class. It is true that

these are probabilities and not demonstrations; but if it be desirable to determine the daily amount of carbonic acid evolved by the community, it can only be effected by dividing them into classes, and determining the precise influence of certain agents during their period of action.

"These quantities give the following total average results in the twenty-four hours:—

In quietude . . . 26·193 oz. of carbonic acid = 7·144 oz. of carbon.

Non-laborious class 31·824 oz. of carbonic acid = 8·68 oz. of carbon.

Laborious class . . . 43 oz. of carbonic acid = 11·7 oz. of carbon.

or a general average of 33·67 oz. of carbonic acid and 9·18 oz. of carbon.

"As some of the elements in this calculation apply to myself alone, viz. those in reference to sleep and exertion, it may be of interest to determine my average apart from that of those who were conjoined with me in some parts of the inquiry. Thus,

In quietude . . . . . 28·8 oz. of carbonic acid =  
7·85 oz. of carbon.

As a member of the non-laborious class 33·43 oz. of carbonic acid =  
9·11 oz. of carbon.

As a member of the laborious class . . . 45·7 oz. of carbonic acid =  
12·19 oz. of carbon.

or a total average of 35·97 oz. of carbonic acid, and 9·72 oz. of carbon in the twenty-four hours."

The remaining part of Dr. Smith's paper is occupied with an account of his experiments on the excretion of carbonic acid resulting from the use of various articles of food, tea, coffee, alcohol, and so on.

We may gather from the preceding statements that the average estimate of previous observers was 8·31 oz. of carbon expired in twenty-four hours, or 30·47 oz. of carbonic acid; while according to Dr. Smith's results, only 6·681 oz. of carbon, or 24·497 oz. of carbonic acid, are daily discharged from the lungs of a person at rest; and it is somewhat remarkable that his own estimate of the expiration of carbon and carbonic acid, by the non-laborious classes, viz., 8·68 oz. of carbon and 31·824 oz. carbonic acid, should coincide so closely with the average of the observations of his predecessors, who, doubtless, all belonged to that class. If we assume, in round numbers, 30 oz. of carbonic acid per day, we shall, in all probability, not be far astray in our estimate.

The second paper, by Dr. Smith, on Urea and Urinary Water, contains the results of one of the most laborious and long continued series of observations yet made on this important subject.

The principal part of it consists of observations made upon himself, from 18th January, 1860, to 18th March, 1861, numbering

altogether 1,633 observations of urinary water, and 1,073 analyses for urea on 336 days.

The final average result of this long series of observations was:—

1. Average excretion of urea daily, from 18th March, 1860, to 19th March, 1861, . . . 519 grs.  
Urea excreted per lb. of body weight, . . . 2·73 „
- 2.<sup>a</sup> Average excretion of urea daily, from 18th March, 1861, to 18th March, 1862, . . . 480 „
3. Average excretion of urinary water, from March, 1860, to March, 1861, . . . 53·1 oz.
- 4.<sup>a</sup> Average excretion of urinary water, from March, 1861, to March, 1862, . . . 49·2 „

These averages, obtained by Dr. Smith, from two years' observations on himself, confirm, in a striking manner, the results recorded by Dr. Parkes, and the observations of the Rev. Professor Haughton, and show that the important constants of daily excretion of urea and urine, may be regarded as well established. The following are the results of the three writers:—

*Daily Excretion of Urea and Urine.*

Authority	Urea	Urine	Grs. of Urea per lb.
Rev. Dr. Haughton,	493·19 grs.	52·6 2oz.	3·33 grs.
Dr. Parkes, . .	512·40 grs.	52·44 oz.	3·36 grs.
Dr. E. Smith, .	499·50 grs.	51·15 oz.	2·73 grs.

Dr. Haughton obtained his results by observations on ten persons of different habits, carefully brought, previous to experiment, into the condition of dynamico-physiological equilibrium.

Dr. Parkes' results are the average of a great number of observations made by German, French, American, and English chemists.

And Dr. Smith's, as we have seen, are the result of the most prolonged series of observations as yet made upon a single individual.

All three methods, though essentially different, give the same results, except as to the proportion of the excretions to body weight; with respect to which we should, of course, give a preference to the numbers recorded by Haughton and Parkes, as they are based upon more than a single subject of observation.

<sup>a</sup> This information was added to the paper while passing through the press.

We cannot follow our author through the very interesting details of his discussion of the relation of urea and urinary water, to the hours of meals, day and night, and the seasons of the year—but proceed to extract the following, which will be read with interest by many:—

*“Relation of Urea to exertion.*

“The effect of exertion has, until very recently, been determined only in an indefinite manner and during short periods. Draper, Speck, and Lehmann found no increase in the urea, whilst C. J. Lehmann, Hammond, Beneke, and Beigel found a variable increase not exceeding 25 per cent. When much sweating occurred, as it commonly did with severe exertion, it was assumed that urea had been lost by the perspiration, in accordance with the results obtained by Funke and Meissner. The excretion of urinary water varied in the different experiments. Voit has, I believe, recently ascertained that with prolonged exertion a dog did not emit any materially increased quantity of urea—a result which will now be shown to correspond with my own preceding and contemporaneous experiments.

“The relation of urea to exertion was determined by the second series of inquiries, viz., those made on four prisoners from March 1 to March 26, 1860.

“The treadmill is a revolving drum, with steps placed at a distance of 8 inches upon the outside of the cylinder; and the prisoners are required to turn the wheel downwards by stepping upwards. The rapidity of revolution is regulated partly by the weight of the prisoners, and partly by a governor, and, therefore, is not absolutely uniform. The prisoners grasp a crossbar, and partly hang by it, and the body is held behind its centre of gravity. They were engaged in this labour in alternate quarters of an hour, the intervening periods being occupied in perfect rest in the sitting posture. The duration of this mingled labour and rest was from 7.15 to 8.25 a.m., 10.10 a.m. to 1.50 p.m., and 3.10 to 5.20 p.m.; so that the total period of actual labour daily was  $3\frac{1}{2}$  hours. The total ascent per hour of continuous labour was 2160 feet, and per day 1.432 mile. The average weight of each man at the end of the inquiry was 105.125 lbs., 108.125 lbs., 120.5 lbs., and 122.625 lbs. avoirdupois, and of the whole, 112.75 lbs; and therefore the number of tons which they lifted one foot per day was a follows, upon the data used by Professor Haughton:—

TABLE XXXI.

No. of Prisoner, .. ..	858	948	1040	1041	Average of all
Weight in lbs.,...	105.125	108.125	120.5	122.625	113.75
Tons, 1 foot daily,	354.81	356.76	406.56	413.89	383.9

"Hence the average labour of each man was represented by lifting 384 tons through one foot per day, and this was exacted on alternate days only, on Tuesday, Thursday, and Saturday, whilst Sunday was a day of almost unbroken rest. There were during the inquiry 10 days of treadwheel labour, 10 of very light labour, and four of perfect rest."

The table given by Dr. Smith of the excretion of urea, urine, and chloride of sodium, on days of hard and light work, appears to contain some anomalies; for example, the daily quantities of chloride of sodium are more than double those given by other observers; and one of the subjects of experiment appeared to undergo a retardation in the discharge of urea that was altogether exceptionable.

"The average of all the observations gives the following results. On Sundays the elimination was to the extent of 494 grs., on days of comparative rest 512 grs., and on treadwheel days 528 grs. The increase on the days of treadwheel labour over that of mere routine labour was 16 grs. per day. The prisoner No. 1041, to whose exceptional returns I have before alluded, had no average increase with treadwheel labour, but, on the contrary, there was an average decrease of 51 grs., and the increase was carried on to the following day. The three other cases exhibited an increase of 37 grs., 59 grs., and 21 grs. daily, or an average of the three of 42 grs. daily with labour."

We do not think that 42 grs. of urea are sufficient to account for 384 tons lifted through a foot; and, indeed, from subsequent experiments made in June, 1861, in Wakefield Prison, it would appear that the difference in the excretion of urea on working and idle days is much greater than 42 grs.

"Four men, of regular habits and in a good state of health, were selected. Two were weavers of wide-width cocoa-matting, which is a very laborious occupation, and two were tailors. Their ages were 19, 22, 24, and 28 years. Their height was  $64\frac{3}{4}$ , 66,  $66\frac{3}{4}$ , and 67 inches; and their weight 118 lbs. 11 oz., 125 lbs.  $12\frac{1}{2}$  oz., 146 lbs.  $11\frac{3}{4}$  oz., and 146 lbs.  $15\frac{3}{4}$  oz. The girth around the nipples was  $32\frac{3}{4}$ ,  $34\frac{1}{4}$ ,  $35\frac{3}{4}$ , and  $35\frac{1}{4}$  inches, giving an average of nearly  $34\frac{1}{2}$  inches. The total averages of age, height, weight, and girth were  $23\frac{1}{4}$  years, 66.1 inches, 134 lbs.  $8\frac{3}{4}$  oz., and  $34\frac{1}{2}$  inches.

"They had been fed upon the highest class of prison dietary; but as that consisted of too much variety of food for our purpose, it was deemed advisable to give them a uniform daily dietary during one week before the experiments began, and it was thenceforward continued without intermission until the inquiry terminated.

"The food supplied daily was in part fixed and in other part variable in quantity. The fixed quantities were those of meat, oatmeal, and potatoes, and the variable ones those of bread, salt, and water. Milk was given in a fixed quantity, but the amount supplied was not uniform in the two classes of prisoners. The meat consisted of 5 oz. of lean and 1 oz. of fat cooked beef without bone. The supply of oatmeal was 2 oz., and of cooked potatoes 1 lb. daily. 20 oz. of skimmed milk were given to the tailors, and 25 oz. to the weavers. The daily quantity of bread eaten was on the average 24.3 oz. by the tailors, and 30.4 oz. by the weavers, or a general total of 27.35 oz. The quantity of chloride of sodium eaten (besides that contained in the bread) was 136.5 grs. daily by the tailors, and 63.5 grs. by the weavers, giving an average of 100 grs. daily. There was considerable variation in the quantity from day to day; for whilst one of the tailors ate an average amount of 199.3 grs., the other tailor ate only 73.8 grs. The quantity of water drunk, besides that contained in one pint of gruel, was only 23.8 fluid ounces on the average; and this with the milk gave a total daily supply of fluid of 66.3 oz. The weavers drank much more than the tailors; and the total quantities in the two classes were 80.5 oz. and 52.1 oz. The solid food was 51.8 oz., and the fluid 66.3 oz., or a total ingestion of 118 oz. daily.

"The total average daily quantity of urea evolved was 655.65 grs., of which 608.4 grs. were emitted by the tailors, and 702.9 grs. by the weavers. The maximum and minimum amounts were 790 grs. and 456 grs.—the former in the weavers, and the latter in the tailors. In the weavers the quantity exceeded 700 grains on seven of thirteen days, whilst it occurred only three times during that period in the tailors; and in only one instance during the inquiry was it below 500 grains daily.

"The quantity of urea to each pound of body-weight was 4.812 grs. in the tailors, and 4.675 grs. in the weavers; but it varied in the former from 3.72 grs. to 5.82 grs., and in the latter from 3.62 grs. to 5.39 grs. on different days. The quantity of urea eliminated was always lessened on the Sunday. The diminution in the tailors from the Saturday to the Sunday was 145 grs. and 122 grs., and in the weavers 26 grs. and 92 grs., yielding an average diminution of 96.25 grs.

"The quantity of urea in each ounce of urine was on the average 14.9 grs. in the tailors, and 15.25 grs. in the weavers, giving a total average of 15.075 grs. The maximum and minimum quantities were 18.8 grs. and 12.3 grs. in the tailors, and 17.84 grs. and 13.53 grs. in the weavers."

From these observations it would appear that 96 grains of urea represents the difference between working and idle days. Now, this is a quantity more than double that already found from the treadwheel labourers, and yet the labour of the treadwheel is set

down at 384 ft. tons, which is certainly a far greater amount of work than the weavers or tailors could have done.

It is many years since so elaborate and laborious a series of physiological observations have been given to the world by an English physician. With many of Dr. Smith's inferences from his observations we are unable to agree, without further and better observations, particularly as to the influence of mechanical work on the excretions of carbonic acid and urea; but we only express the universal feeling of physiological enquirers when we say that his researches leave no doubt any longer possible on the average daily excretions in health, of carbonic acid, urea, and urinary water.

These important excretions admit of being stated very accurately in numbers easily recollected, viz:—30 oz. of carbonic acid, 50 oz. of urinary water, and 500 grs. of urea.

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*Prolapsus, Fistula in Ano, Hemorrhoidal Affections, their Pathology and Treatment.* By T. J. ASHTON. London: John Churchill.

FOR several years Mr. Ashton's name has been associated with the diseases treated of in the small volume before us. In Vol. XVII. of this Journal, New Series, May, 1854, his first publication—*A Treatise on the Diseases, Injuries, and Malformations of the Rectum and Anus*—came under our editorial criticism; motives of retributive justice compelled us to notice that work in severe terms. Bushe, of New York, who received his surgical education in this city, had just terminated his earthly labours, and his *Practical Treatise on Diseases of the Rectum* was the most complete work on the subject then extant. Mr. Ashton availed himself largely of its contents, copying whole paragraphs, nay, even pages, with singular fidelity. We should not have reverted to this unpleasant subject, were it not that the volume at present under review may be considered as an off-shoot from the first and larger treatise referred to, which, as Mr. Ashton remarks, has so far met with the "approval of the profession, as to have passed through three editions." The abridgment which now engages us, treats only of those affections, "which by their frequency more constantly claim attention, apart from those of more rare occurrence." We

have read it over carefully, and do candidly confess that, as a brief, well-digested, practical treatise, free from those visionary refinements and theoretical innovations so prevalent in the present age of redundant book making, and well adapted to the wants of the majority of surgical practitioners, it has few rivals, perhaps no superior. This tribute of praise we feel bound to accord to the present volume, carefully compiled, as it is, and amended, although, as we have just stated, its parentage is not free from disreputable tainture.

In the chapter on prolapsus, the practical importance of making a careful diagnosis between the two conditions under which the displacement occurs is strongly insisted upon, namely:—1st, That depending upon some morbid condition or alteration of the bowel itself. 2nd, That arising from relaxation and a loss of tone in the muscles intended to close and support the intestine, “for an operation that is applicable in the one instance, and would entirely free the patient from the misery he endured, would, in the other, be followed by a serious aggravation.” “When the protrusion arises from a voluminous and lax condition of the bowel itself, the object to be effected is, reducing (*sic*) its calibre as nearly as possible to its natural capacity, and producing such an amount of adhesion to the deeper structures, as is found to exist in the healthy bowel.” As our readers are aware, various expedients have been proposed, at different times, for accomplishing this object. Mr. Ashton prefers the simple plan originally proposed by Copland—one, two, or more folds of mucous membrane, according to the extent of the disease, are pinched up, and included in a firm round ligature, drawn tight, so as to effect complete strangulation; or the fold may be transfixed with a double ligature, and tied in separate portions. In less severe forms of prolapsus, the application of the strong nitric acid to the mucous membrane is strongly recommended, and this plan has been practised in several of the Irish hospitals for several years past, with very satisfactory results. To the inverted surface of the prolapsed intestine the acid is applied in a linear manner, from above downwards, of course, carefully avoiding the marginal skin.<sup>a</sup>

“But if the protrusion is the result of relaxation of the sphincter ani, and the tissues not depending upon nervous lesion, it is evident any operation performed on the bowel could not be beneficial, but,

<sup>a</sup> Cases illustrative of this practice will be found in Nos. 3 and 8 of the first Vol. of the Dublin Hospital Gazette, published in 1854. They are reported (with clinical remarks) by Dr. Christopher Fleming and Dr. B. M'Dowel.

on the contrary, would be highly improper and prejudicial. Here the end to be attained is the restoration to the tissues closing and supporting the terminal portion of the intestines of the function they have lost; this is to be accomplished by excising a fold of the lax integument, mucous membrane, and superficial muscular fibres from both sides of the anal margin"—a modification, in short, of the operations long ago proposed by Hay and Dupuytren—"Judgment is required with respect to the extent of fold that is removed, enough must be taken away, so as effectually to cure the malady, but the surgeon must be careful, that whilst seeking to remove one source of annoyance, he does not produce another, which will give more trouble than the primary affection, namely, contraction of the anus"—a most important precept, never to be lost sight of.

The chapter on fistula in ano, is a very fair practical digest of the pathology, causes, and treatment of this very common and sometimes dangerous ailment. The author discusses fully the different modes in which the disease may originate, and alludes to the difference of opinion existing between several eminent authorities as to the mode of formation of the internal opening in complete fistula. Sir B. Brodie and Ribes assert very positively, that the disease commences from within the intestine, either by perforation of the gut, as maintained by the first named distinguished surgeon, or the ulceration of piles, as asserted by the latter; whereas Mr. Syme is equally dogmatical as to the disease proceeding in the opposite direction, and remarks, "I do not hesitate to affirm that, when a fistula in ano is formed, the mucous membrane always remains entire in the first instance, and is never perforated until after supuration has taken place." Good reasons are given for rejecting the exclusive adoption of either opinion. A more important question is the usual position of the internal opening of the fistula. This, in the majority of instances, will be found just above the junction of the mucous membrane, with the integument of the anus, as was long since established by the investigations of Ribes.

Amongst the various symptoms attendant upon the disease, and indeed, also upon hemorrhoidal affections, a pain extending down the leg and foot is noticed, as not being unlikely to be mistaken for sciatica, if the history of the case were not carefully inquired into.

Having briefly alluded to the numerous plans proposed at different times, and the sundry instruments employed for the division of the fistula, and commented on the inefficiency, as a

general rule, of the other modes devised for curing the disease, viz., pressure, injections, ligature, &c., Mr. Ashton expresses himself strongly in favour of operation by a limited incision, not extending above the position of the internal opening.

“The importance and advantages of the observations of M. Ribes, regarding the situation of the internal opening of a fistula, and the principles deduced therefrom, namely, that it is not necessary, for effecting a cure of the disease, to carry the incision to a greater height than where it exists, or where the mucous membrane is denuded and thinned, if there is no internal opening, is now fully established. Mr. Syme has for years inculcated and acted upon these principles in his practice, and testifies to their perfect success. I have never carried my incisions higher, and have never been disappointed in the result. But some surgeons of great ability and experience in the profession, and writers of high authority have pursued the practice of Mr. Pott. Sir A. Cooper advises, ‘if any portion of the sinus remain above the opening into the rectum, it should be divided with the probe-pointed scissors.’ Liston was in the habit of dividing the sinus throughout; Fergusson adopts the same practice; but Dr. Bushe, whose practice was very extensive, divided the textures as high only as the internal opening into the rectum, and always found it sufficient for the cure.”

More than half the volume is occupied with the consideration of hemorrhoidal affections; a very good description is given of the different varieties of pile, as also of the vascular tumour, and polypus of the rectum. It would be no easy matter to break new ground upon so threadbare a subject, but this section of the book comes fully up to the present date in all that concerns the pathology, symptoms and treatment of the diseases of which it treats. Cognizance is taken of two recent innovations, neither of which, however, are likely to find favour in our sight.

“M. Amussat advocates what he terms the circular cauterization of the base of hemorrhoidal tumours, which he effects by means of variously constructed forceps, the blades of which are charged with Fulcho’s caustic. The advantages of the plan are not very apparent, and when we are told it is necessary to irrigate the parts with cold water, for several consecutive hours, and that one patient to relieve the pain sat in a cold bath for a week, it is not likely to be generally adopted. Another plan for the removal of hemorrhoids and other growths, emanated in Paris, and became a fashion for a time, but happily, in England at least, is now little practised. I allude to their ablation by that crushing, lacerating,

and unscientific machine, the *écraseur*, which in appearance and operation suggests the idea of belonging rather to the torture chamber of bye-gone ages, than of being an instrument of modern surgery. M. Nélaton reports that many who have been operated on by it, are now the victims of traumatic stricture of the rectum."

The surgical treatment recommended is that which is ordinarily pursued in our Irish hospitals, viz.:—For internal piles, the ligature, in most cases to be passed double through the base of tumour, and each half tied separately—for external piles, excision. When internal piles encroach upon the margin of the anus, a combination of both methods is to be practised, incision of the lower portion of the swelling, and ligature of the remainder. For the soft bleeding tumour of the rectum, nitric acid is the most appropriate remedy, as first advised by Houston. The following paragraph inculcates a useful precept:—

"When external piles exist with internal ones, they must be excised at the same time that the others are operated on, as they will become inflamed by the irritation that necessarily follows, and occasion extreme pain and annoyance. But it is highly essential that a correct diagnosis be made between external piles, and the œdematous swelling of the margin of the anus, induced by the condition of the internal piles, for if an error is made, and the œdematous integument removed, the serious evil of contraction of the anus will ensue on the cicatrization of the wounds."

Having so far noticed the contents of Mr. Ashton's publication, we have no hesitation in recommending it to our readers, as a good practical compendium of the important and very numerous class of diseases of which it treats. As may be perceived from the extracts quoted, the volume is not free from blemishes of composition—but these do not detract from its professional value.

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*Lectures on the Principles and Practice of Midwifery.* By EDWARD WILLIAM MURPHY, A.M., M.D. Second Edition, Enlarged and Revised. London: Walton and Maberly. Post 8vo., pp. 735.

PARTURITION is a process essentially physiological. In its normal course it is directed by invariable laws, the principal element in

originating and completing it being reflex nervous action. That labour does not constantly maintain its physiological characters experience amply proves; and numberless instances occur where pathological differences prevail, from the slightest deviation of the acknowledged rules to the most formidable complications which peril the parturient woman. Hence the gradual development of obstetric science and art to avert the dangerous tendencies of these multitudinous pathological conditions. It is true that nature is able to overcome many of these with but little danger to the mother or offspring; but, in others, art must be had recourse to, to rescue both from the threatening dangers. Within the past 25 years numerous reforms have been proposed, and various practices developed, to abridge the sufferings of the parturient patient, by shortening the duration of the labour. This "young midwifery," in all its advancement, has, however, met with much opposition from those of the old school, so that students and junior practitioners have been bewildered as to the modes of practice to be adopted under many of the difficulties that arise. The usual result of opposition of this nature has, however, at length occurred—truth has prevailed, and the junior obstetric practitioner of the present day considers it no longer necessary to be guided solely by the traditions of the past; but relying with confidence on the teachings of science and experience, sees in the result gratifying evidences of the good effects of these great reform principles.

The work before us is divided into three parts; the first division, consisting of eight lectures, being on gestation. Natural parturition and its complications are considered in the second division, 26 lectures being devoted to this object. The remaining seven lectures, of the third division, are on lactation, together with *post partum* inflammations and fevers; and there is an appendix, chiefly consisting of statistical tables. The author, who commenced his career as assistant in the Dublin Lying-in Hospital, is so well known to our readers, both by the former edition of this book, and by his contributions to our pages, that it is almost unnecessary that we should say that the various subjects discussed have, on the whole, been treated with a wisdom derived from matured experience. Yet, in some respects, we think his teaching not such as the present advanced state of obstetric science requires; and to these we shall, in the first place, direct attention. Since the publication of the first edition of Dr. Murphy's lectures great changes have taken place in the opinions held in the Dublin school of midwifery as to

the management of tedious and difficult labours, especially as to the affording of assistance at an early stage, and as to the use of the forceps; and, as we consider Dr. Murphy as a representative of our school, and as, by his frequent allusions to the practice of the Dublin Lying-in Hospital, he draws special attention to the relation he bears to us, and is consequently likely to be taken by many as an exponent of our views, we think it necessary to dwell more at length on the points on which we differ from him than we should otherwise do; and, as these more particularly occur in the following passage, we think it better to give it nearly in full before entering into any criticism:—

*“Delivery of the Child in Protracted Labour.*—Having given this brief outline of the general treatment necessary in these protracted cases, we shall now enter upon the more difficult question of their management to secure the delivery of the child, assuming that instrumental aid is not rendered imperative by the presence of inflammation or exhaustion. It is hardly necessary to state that there is every variety in the degree of disproportion between the head and the pelvis. In some instances, it is so slight that the child may be safely delivered without any assistance; it will only occupy a longer time in passing through the pelvis. In others, the amount of difficulty may be so much increased as to render it doubtful whether the head can pass without assistance; and it is in these cases that the rules which are given for your guidance are the most contradictory. Again: there may be a still greater disproportion, in which you can have no doubt about the improbability that the head can be expelled by the natural efforts of the uterus, although there is very great doubt, and no little dispute, as to the means by which the head must be extracted. Lastly, in occasional instances the narrowness of the pelvis is such, or the magnitude of its distortion is so great, that the safe delivery of the child is hopeless: the head must be lessened; the child must be destroyed before it can be brought into the world. In extreme cases, even this cannot be done; but recourse must be had to the difficult and dangerous operation of removing the child from the uterus by laying it open, in order to save the mother from the dreadful alternative of dying undelivered.

“In those cases of slight deviation from the standard pelvis, where there is every evidence of space sufficient for the head ultimately to pass, if nature be allowed time for the purpose, you would not, of course, interfere with her; although we believe instances might be quoted where *very adroit operators* have, even in such cases, relieved the tedium of a long attendance by a ready application of the forceps. It is sufficient to say that the united testimony of the profession, given in every standard

work of midwifery, is opposed to such a practice; and if any accident should arise from this mischievous meddling, the operator is fully responsible for all the consequences that follow from it. But in those more doubtful cases, in which there seems hardly sufficient space for the head to pass safely through the pelvis, the practice is not so clear, nor is the evidence of the profession so unanimous on the subject. When, in such instances, the head is actually arrested, and so remains for some hours in the same position—a sufficient length of time to satisfy you that the uterus cannot advance it; if the ear can be felt, or the finger be passed easily between the head and the pubes, you may use the forceps to deliver the child, and we think the weight of authority will support your practice. But when the head is not so arrested, but, at the same time, advances so extremely slowly that it seems to be arrested, you have here the discordance of authorities at once confounding you.

“In the last generation, we find Burns, Hamilton, and Campbell advocating prompt interference when the second stage is making such slow progress; while Wm. Hunter, Osborne, and Denman were opposed to the use of instruments so long as the natural efforts seemed adequate to their object. At the present time, Dr. Collins has laid down the rule ‘that so long as the head advances, *ever so slowly*, the patient’s pulse continues good, the abdomen free from pain or pressure, and no obstruction to the removal of urine, interference should not be attempted unless the child be dead.’

“This principle has been severely attacked; and in the controversy a new and very important question has been raised by Professor Simpson, which if true, would decide in favour of interference in all such cases. He has shewn from statistics that mortality is increased in direct proportion to the length of the labour; that a labour of four hours duration is more fatal than one of two hours; one of eight hours than one of four; and so on. Hence the inference that protracted labours are dangerous because of the *time* they occupy. We have given this important proposition the reflection it so justly merits; but confess we cannot coincide in the conclusions drawn from it. It seems to prove too much; that not only are the longest labours the most dangerous, but that the shortest are the safest: neither of these propositions has the support of our experience. The dangers of protracted labour depend upon many causes; and, if the constitution be good, *time alone* is the least injurious. Rapid labours are attended with risks from which those of moderate duration are free. We do not think, therefore, that the shortest labours are the safest, or the longest *in time* the most dangerous. This question must be determined by individual experience; because there are many causes of error very difficult to remove from a statistical calculation, which would lead to a false conclusion. The time which labour occupies involves the question—What causes the delay? If a difficulty exist

leading to a fatal result, the death is attributed to the time occupied, not to the obvious cause; so that it may be perfectly true that labours are dangerous in proportion to their protraction, and yet not true that the danger consists in the time occupied. Dr. Simpson has taken Dr. Collins's tables as the basis of his calculation. These were derived from the Dublin Lying-in Hospital exclusively. In that hospital, women were frequently brought in when labour had made considerable advance. Those delivered in one, two, or four hours, may have been a much longer time in labour before they entered the hospital. The actual duration of labours under six or eight hours in that institution was quite uncertain. These statistical results may prove that every hour spent in the hospital increases the danger to the patient; but this proves nothing with regard to labours of one, two, or four hours' duration; because in such cases there was no certainty as to actual length. The time stated in the report was the duration of labour *while in the hospital*.

"With every wish to avoid controversial questions, that before us is too important to pass over. Professor Simpson's able researches have been quoted as an authority for the most unscrupulous use of instruments. Women in perfectly natural, and even easy labours may be delivered by the forceps; and if they be persuaded that it is dangerous to allow the labour to proceed when it can be at once terminated, the argument is a justification for immediate delivery. Thus those whom Dr. Blundell well describes as 'obstetric reprobates' go about with the forceps to deliver the child the moment it comes within reach, and will quote Professor Simpson as their authority for the practice.

"This practice is not new; Chamberlen and Roonhuysen followed it when the forceps and vectis were first invented. The mischiefs done by the followers of these men led a succeeding generation to protest strongly against this abuse, some eminent and experienced men, as Osborne, almost excluding the forceps from practice; and thus, ever since, a struggle has been going on between those who consider the art of midwifery to be the quick delivery of the child, and those who believe it to be the art of assisting nature to overcome a difficulty. Those names who stand highest as men of eminence and of the largest experience are perfectly agreed upon the impropriety of unnecessary interference, or, as Blundell describes it, 'mischievous meddling.'

"Professor Simpson's statistics show the proportionate mortality in protracted labours, but do not, could not, state the mortality if the duration of labour were shortened by instrumental interference. It is assumed that the mortality would diminish; but this is not proved. We have endeavoured to determine this question in the only way which seemed to us practicable; by comparing the results where the forceps had been used to conclude labour, and where it had been allowed to proceed in a protracted course to terminate without assistance.

“For this purpose, the only reports upon which we can depend are those of the Dublin Lying-in Hospital. In all others we have forceps operations, and the results to mother and child, but we have no knowledge of the effects of merely protracted natural labour.

“In this respect, therefore, these reports from their fulness and accuracy are especially valuable. Three reports have now been published, giving the results of different—we might say—opposite practice under precisely the same circumstances :—

Reports of	Total Cases	Natural Labours above 24 hours						Forceps Cases						Vectis Cases					
		Mothers		Children		L.	D.	Mothers		Children		L.	D.	Mothers		Children		L.	D.
		L.	D.	L.	D.			L.	D.	L.	D.			L.	D.	L.	D.		
Dr. Collins, .	16,654	324	299	25	263	61		24	20	4	16	8		3	3	—	3	—	
Drs. Hardy and M <sup>c</sup> Clintock, .	6,634	171	162	9	119	52		24	19	5	11	13		17	17	—	8	9	
Drs. Johnston and Sinclair,	13,748	247	235	12	198	49		200	189	11	171	29		—	—	—	—	—	
	37,036	742	696	46	580	162		248	228	20	198	50		20	20	—	11	9	

“The total of these reports give the following results :—742 women, having labour protracted beyond 24 hours, were delivered without aid ; 46 died, being nearly in the proportion of 1 to 16 ; 162 children were lost, being in the proportion of 1 to 4·6 ; 248 women were delivered by the forceps, and of these 20 died, or 1 in 12·4 : 50 children delivered by forceps were lost, or about 1 in 5.

“So far, therefore, as the general results are concerned, the mortality of mothers in protracted labour will bear comparison with that where the forceps were employed. In both instances the maternal mortality is higher than the average, because it was impossible to separate cases of puerperal fever from ordinary labours. Of necessity, therefore, the mortality was increased. In placing, however, the question in the clearest light, the practice of Dr. Collins, who only used the forceps once in 694 cases, may be compared with that of Dr. Shekleton (Johnston and Sinclair's *Report*) who used it once in  $68\frac{3}{4}$  cases. Both were in charge of the same hospital and of similar cases. The deaths of mothers delivered (without the forceps) in protracted labours, were 1 in 16. (Dr. Collins's *Report*.) The deaths of mothers delivered with the forceps, were 1 in 18. (Drs. Johnston and Sinclair's *Report*.) If this difference on the one side be compared with that on the opposite (1 in 12·4) from the total results, it may be said to disappear ; proving that, in cases of difficult labour, which are of necessity protracted, mere duration does not increase the mortality.”

Dr. Murphy next quotes the tables of foreign practice, as given by Dr. Churchill, and proceeds :—

"We have endeavoured to prove, from the fairest review of statistical evidence we can make, that, in difficult labours, where so much judgment is required, there is no essential difference in the maternal mortality, whether the forceps be used or not. The deaths of children are also alike, one in five cases. 'The total result,' says Dr. Churchill, 'is that in 5,731 cases' (of forceps operations) '998 children were born dead, or about 1 in 5.' (*Midwifery*, p. 344.)

"We have shewn (p. 275,) that in protracted labours the deaths of children were 162 in 742 cases, or about 1 in  $4\frac{2}{3}$ , an immaterial difference. Hence in such cases the experienced practitioner may exercise his own judgment, uninfluenced by fear of delaying assistance on the one hand or of affording it on the other. In fact, every case of difficult labour requires to be considered individually, and the treatment must vary with the conditions. If it should happen, as in many of Dr. Collins's cases, that time was necessary in order so to mould the head to the inequalities of the pelvis, that it might pass through, the practitioner need not be under the apprehension that every hour's delay increases the danger, and be led against his will to a mischievous interference. If, on the other hand, the case seem to indicate a chance of saving the child and shortening labour without injury to the mother, he will not hesitate to interfere."

There is much in these extracts to which we must take exception, but especially the reference to the Statistics of the Dublin Lying-in Hospital. But first, we must protest against the misrepresentation of Dr. Simpson's views—for such we believe it to be—to say, as many other writers besides Dr. Murphy have done, that he teaches, "that protracted labours are dangerous, solely because of the *time* they occupy;" or that assistance is to be given simply because of the length of time the labour has occupied. His argument, as stated in the first part of this paper, may, it is true, bear this construction; but in the same paper it is explained as follows:—"It may be laid down," he says, "as a general proposition, that *the liability to most of the morbid complications connected with labour increases in proportion as the labour increases in duration.*"<sup>a</sup> This is a proposition the truth of which cannot be gainsaid, and yet, one that can afford no support to the "obstetric reprobates" referred to by Dr. Murphy. But the attempt to weaken Dr. Simpson's argument by casting a doubt on Dr. Collins' statistics is a still more extraordinary part of Dr. Murphy's statement. The assertion that

<sup>a</sup> *Obstetric Memoirs*, Vol. i., p. 528.

"the time stated in the report (Dr. Collins') was the duration of labour *while in the hospital*," will probably astonish no one more than Dr. Collins himself, who states distinctly, that his tables refer to the duration of labour from its commencement, and not from the time of the admission of the patients into the hospital. Thus, in his Report, page 21, Dr. Collins says, "I shall now give a concise statement of the *duration* of labour in the 16,414 women delivered; and also the result to the mother. In 564 cases the duration cannot here be stated, many having been delivered immediately on admission, others on their way to the hospital, and some were not noted." Then follows the tables in reference to these cases; and, in a summary, he commences—"Thus, of the 15,850 cases *noted*, 15,084 were delivered within 12 hours of the *commencement of labour*, &c."

We will not stop to show that Dr. Murphy virtually admits all that is contended for (Dr. Collins' data having been proved to refer to the entire duration of labour), when he says, "these statistical results may prove that every hour spent in the hospital increases the danger to the patient"—but will follow him in his examination of the published Reports of the Dublin Lying-in Hospital; and we must say, the statements in this part of the extract amaze us by their inaccuracy; we cannot believe that Dr. Murphy would wilfully distort the facts to support his theory, and can only understand his falling into such serious errors by remembering what a profound philosopher has told us of the nature of a hypothesis,<sup>a</sup> that it absorbs and converts all things to its own use. On a former occasion we have, ourselves, tried to obtain a solution of the question at issue, by a comparison of the three published Reports of the Dublin Lying-in Hospital, when, certainly, the results we obtained were widely different from those now put forward by Dr. Murphy. We showed that the deaths of the mothers in protracted cases, in Dr. Collins' report, where no assistance had been given, were 12 in 171 cases, which is equal to 1 in 14·25, instead of 1 in 16, as stated by Dr. Murphy; but even this is below the actual mortality, for the total number of tedious and difficult cases recorded in Dr. Collins' report is 264, of whom 171 were allowed to be delivered unassisted; and, on close examination, it will be

<sup>a</sup> "It is the nature of an hypothesis," says Tristram Shandy, "when once a man has conceived it, that it assimilates everything to itself as proper nourishment; and, from the first moment of your begetting it, it generally grows stronger and stronger by everything you see, hear, read, or understand."

seen that 54 of these do not come under the head of tedious and difficult labours, viz.—7 cases in which there were convulsions, 8 rupture of the uterus, 6 prolapsed funis, 3 arm presentations, 1 foot, 11 breech, and 18 twin cases—so that the numbers should stand thus:—There were 210 tedious and difficult labours; of these 117 were allowed to deliver themselves unassisted, of whom 12 died, being at the rate of 1 in 9·75; and 14 were assisted by the forceps or vectis, of whom 4 died, being at the rate of 1 in 3·5; and 79 by the perforator, of whom 15 died, being at the rate of 1 in 5·27; and of the total 210 tedious and difficult cases 31 died, or 1 in 6·77. On comparing this result with that obtained by Dr. Shekleton, as recorded by Johnston and Sinclair, the true value of affording speedy relief, by the use of the forceps, will appear. In this report the total number of tedious and difficult cases is 514; of these 247 were allowed to deliver themselves unassisted, of whom 12 died, being at the rate of 1 in 20·58; and 168 were assisted by the forceps, of whom 6<sup>a</sup> died, being at the rate of 1 in 28; and 99 by the perforator, of whom 13 died, being at the rate of 1 in 7·61; and of the total number (514) of tedious and difficult cases 31 died, being at the rate of 1 in 16·58, as compared with 1 in 6·77 in Dr. Collins' report.

Inasmuch as the Reports of the Dublin Lying-in Hospital do not exactly correspond in their construction, a comparison of them is attended with much difficulty, and must always be open to criticism; but that which we have ourselves made, and which was originally published in our review of Sinclair and Johnston's report in November, 1858, is, we believe, founded on a just principle; and, with the corrections now made, is accurate in its details; certainly the comparison made by Dr. Murphy, as given in our extract, is wrong, both in details and in principle. He makes the number of births recorded by Dr. Collins stand for the number of women delivered, making no allowance for twins and triplets; where he got his other numbers we cannot tell; and, as we have already seen, he throws a doubt on the entire series of Dr. Collins' observations, by what he states as to the data from which the duration of labour was calculated. The heading in the table "Natural Labours above 24 Hours" is evidently a clerical error; but where he gets 324 cases, lasting above 24 hours, in Dr. Collins'

<sup>a</sup> Of these six deaths, three, at least—in which death arose from accidental causes scarlatina, pneumonia, and mental anxiety—might fairly be deducted, making the proportion one death in 56.

report, we cannot tell. Dr. Collins himself, states that of the 15,850 cases in which the duration of the labour was noted, 15,586 terminated within 24 hours, leaving 264 that exceeded this period—of which, as we have already shown, 54 were cases of complicated labour.

Then, again, Dr. Murphy places all deaths, after the use of the forceps, to the charge of this instrument, even where it was used subsequently to the occurrence of rupture of the uterus; and, by combining his strangely-selected numbers in a manner still more strange, he actually makes it appear a better practice to leave protracted cases to their own resources than to assist them with the forceps—the deaths in the unassisted cases being, he says, 1 in 16, and in the assisted 1 in 12·4. The conclusions drawn as to the deaths of the children are equally inaccurate; and we are very sure Dr. Murphy will find very few practical obstetricians who, at the present day, will agree with him in the following dictum.

“We have endeavoured to prove, from the fairest review of statistical evidence we can make, that in difficult labours, where so much judgment is required, there is no essential difference in the maternal mortality whether the forceps be used or not.”

Dr. Murphy lends his countenance to the idea that vesico-vaginal fistula is, in most instances, if not in all, to be traced to the use of the forceps. This subject has been so ably handled by Dr. Sinclair, in a late number of our Journal<sup>a</sup> that we feel unwilling to enter on it. Suffice it to say, that he has proved that the frequency of the occurrence of this—of puerperal fever, and of the other complications of the puerperal state—diminishes in proportion to the frequency with which the forceps is used. We must, however, again allow Dr. Murphy to speak for himself:—

“With regard to vesico-vaginal fistula, it is difficult to trace this accident in all instances to the use of the forceps. When a forceps operation is described to us, we are seldom told that any mischief is the consequence. The splendour of success is very dazzling; and, while we admire the operation, we are too often left in the dark as to its effects. Nevertheless, we have been able to trace this accident clearly to the use of the forceps in several instances; while, on the other hand, *Dr. Collins records only one case of vesico-vaginal fistula in the whole of his report of 16,654*

<sup>a</sup> Vol. xxxii., p. 60.

*cases*, and that was a *case of perforation*; consequently this accident never occurred in those protracted cases which were delivered naturally. The principal cause of difficulty in Dr. Collins's cases was the large head of the male child forcing its way through a very osseous pelvis: the pressure on the soft parts must be very great, and, if fistula could be produced by great protraction of labour in cases that ultimately were delivered without assistance, it must have been an accident of frequent occurrence in these cases, the soft parts being so much compressed: but such did not happen, and therefore they afford a very favourable contrast to cases delivered by the forceps in nearly similar circumstances."

Before quitting this subject we must remark that it is quite true Dr. Collins only records one case of vesico-vaginal fistula; but he also records six cases where death arose from sloughing of the vagina; and, as Dr. Simpson has remarked, in but one of these did labour terminate within 24 hours, that is, in the proportion of 1 case of sloughing in 15,586, and 5 of the cases in labours exceeding 24 hours, or a proportion of 1 in 53 cases, which appears to us but slight encouragement to adopt Dr. Collins' rule of allowing the head to remain in the one position, compressing the soft parts of the mother for six hours before giving assistance—or even Dr. Murphy's more moderate one of four hours.

The remaining remarks of Dr. Murphy on the use of the forceps—the counselling to allow the head to remain stationary in the pelvis for four hours before its use, and that the ear should be felt before its application, and that the traction should be made with a waving motion—and his warnings as to the dangers which are consequent upon its employment, and the result to mother and child are not, for the most part, in accordance with the present state of obstetric science.

We contend that the art of midwifery is based upon a most scientific basis; that the practised accoucheur can tell, with unfailing accuracy, that the coming struggle will be a severe one; that the powers of the patient will be unnaturally taxed, and that he can, by a *timely* judicious interference, avert the dangers, and place both mother and child in a condition of safety. If the protraction arises from a disproportion between the soft parts of the mother and the child, from a failure of the maternal powers, or from malposition of the head, these can be ascertained with certainty at an early period of the labour; but whether the maternal powers can overcome these difficulties cannot by any means be determined. It soon becomes evident, however, that if the case be allowed to go

on unassisted, conditions will arise entailing danger, not only to the future comfort of the patient, but to her life, and to that of her offspring; and it is, we maintain, incumbent on the accoucheur, under such circumstances, to abridge the duration of the labour, and avert the impending danger. The accoucheur's duty is to preserve the child, not to wait for its death, and then to deliver by perforation. If the forceps could deliver the child at the onset of the difficulty it is *cæteris paribus* the duty of the accoucheur to relieve the woman of her sufferings and avoid the dangers arising from the pressure of the child on the soft parts. In estimating the dangers of the use of the forceps, it must not be lost sight of that it is not its proper and careful use that causes death, if death is the result of the exhaustion produced by the delay. When the labour ceases to be physiological, and becomes pathological, and the state of the os and the dimensions of the pelvis admit of the child being brought through by the forceps (not by the "forcible extraction" of Dr. Murphy), aided by the contractions of the uterus, no harm ever ensues, and the inflammation and ulceration of the neck of the womb and of the pelvis, lacerations of the perineum, and vesico-vaginal fistulæ are mere chimeras of minds warped by old prejudices; or if they occur, arise from too long a delay before the use of this instrument.

There are some other points, in reference to difficult labour, that we can only briefly notice—such as the question of turning, in certain cases, instead of resorting to craniotomy or other instrumental aid. Without going the length of those who assert that by the adoption of this proceeding craniotomy may be abolished from midwifery practice altogether, we have no hesitation in expressing our belief that it is a most important and valuable reform in midwifery practice, and one that, in a systematic treatise, should not be passed over in silence, however great may be the veneration of the author for the authorities under whom he himself studied. Another matter, more or less connected with this subject of difficult labour, that Dr. Murphy has not treated as it deserves, is the history, nature, and diagnosis of the obliquely ovate pelvis of Naegle. Not a little light has been thrown on this subject by the labours of the modern school of midwifery in Dublin; and in our own pages<sup>a</sup> Dr. Sinclair has given a report of a case, the first, we believe, on record, where this condition has been recognized

<sup>a</sup> Vol. xx., p. 79.

during life, and one supplying the link in its history of which Dr. Murphy says we have no evidence, and for the want of which, he says, the deformity remains a problem to be solved.

We have now done with our fault-finding—a task imposed on us as well by our zeal for the honour of the modern school of midwifery in Dublin, as by our anxiety for the maintenance of correct principles. The remaining chapters will be found to fully justify the favourable opinion we have already expressed as to the general character of the book. Where so much is excellent it is difficult to specify particular examples. The five lectures devoted to the consideration of uterine hemorrhage constitute a most concise, elaborate and able treatise on the subject. They open with a review of the manner in which hemorrhages take place from other parts of the body, pointing out the circumstances uterine hemorrhages have in common, and those wherein they differ. Then an able, brief, and clear exposition of the structure of the placenta and of the utero-placental circulation is given; and, after collating the opinions of the most recent investigators, the author sums up as follows, laying down the principles that guide him in the treatment he recommends for the different varieties of hemorrhage:—

“On a question of so much difficulty, and one which has been so much misunderstood, we have preferred to give you the descriptions of the best and most careful observers, rather than our own—to adopt their language as being the least likely to be disputed. These quotations are sufficient to prove that there is a portion of the placenta in direct communication with the uterine vessels, which has been described by Weber as a rete of colossal capillaries, by John Hunter as a cavernous structure, and by Goodsir as a great cavity everywhere traversed and intersected by filamentous prolongations of the lining membrane of the uterine veins; that the maternal blood is impelled through innumerable uterine arteries into the great cavernous cavity of the placenta, and, having supplied the necessary nutriment to the fetal blood, flows back through the large oblique canals that communicate with, or are part of, the uterine veins; that these venous canals and the cavernous structure are composed of a tissue of extreme delicacy; and lastly, that there is no direct communication between this maternal circulation of the placenta and that going forward in the fetus. What, then, would be the effect if this vascular connection between the placenta and uterus were broken through?

“*Partial Separation of the Placenta.*—From the nature of this injury, the torn curling arteries might not pour out much blood (see Appendix.) Any hemorrhage must arise chiefly from the broken veins, and not,

recollect, from one, but *from both* of the divided extremities. There are thus two sources from which blood escapes: 1. The openings that communicate with the network of colossal capillaries, by which the cavernous structure is emptied of maternal blood, to be again filled by the uterine arteries. This may therefore be considered as arterial hemorrhage of the uterus through the placenta. 2. The venous orifices on the surface of the uterus. The maternal blood flows from both extremities of the divided veins; in the former instance in a direct current from the uterine arteries through the cavernous structure; in the latter by regurgitation from the veins of the uterus. You can understand, therefore, not only the possibility but the certainty of the fact which the late Dr. Hamilton stated many years ago—which Professor Simpson has since with so much ability confirmed, but which still remains an enigma to perplex some writers on the subject—that, when the placenta is partially detached from the uterus, blood flows from its denuded surface, and the exposed uterine veins (or sinuses, as they are called) are not the only sources of uterine hemorrhage. When the placenta is completely separated from the uterus, and its connection with these arteries broken off, you can also perceive that blood will no longer flow from the surface; and the only blood that can then be expressed from it, is the residue lodged in the cavernous structure of the placenta.”

In discussing the treatment, Dr. Murphy is not content with laying down arbitrary rules, but refers constantly to the principles on which he acts, while his directions are clear, explicit, sound, and eminently practical. He looks upon the application of cold in uterine hemorrhage, as a general refrigerator, with great apprehension, and says it ought to be employed as a stimulant to the uterus, strict attention being given to support the action of the heart. “Astringents and styptics,” he says, “have little power, but stimulants are almost indispensable.” Dr. Murphy has, very properly, great confidence in the use of opium; and he states here, and in other parts of the work, the principles which should govern its administration. We extract the following conclusion:—

“In the use of opium, therefore, strict attention should be paid to the degree of hemorrhage, and its effect on uterine contractility. When the loss of blood is slight, or at least not sufficient to impair the tone of the uterus, a large dose of opium would be dangerous, lest it might act as a sedative, overcome the influence of the nerves, and cause the uterus to relax. When the loss is great, and followed by exhaustion of the uterus, then the very same quantity of the medicine will produce an opposite effect: it will act as a stimulant, and cause contraction of the uterus.”

On the use of ergot of rye, he says :—

“When the nerves of the uterus have lost their natural irritability, and the uterus is in a state of atony, opium is the most efficient excitant to its action, because it then acts upon these nerves as a most powerful stimulant; but when the irritability is restored, or if it be only slightly impaired, it acts as a sedative, and may paralyse the uterus. Ergot of rye, on the contrary, is quite inefficient in nervous exhaustion of the uterus; because, so far from acting as a stimulant, it seems to have a sedative effect (at least upon the heart), while its specific action is obvious the moment that exhaustion is removed. Opium, therefore, is of the highest value in saving a patient from the consequences of extreme flooding—ergot of rye in preventing such hemorrhage from taking place. Both remedies may be used in the same case, but one can never supply the place of the other.”

The consideration of electricity, direct irritation of the uterus, compression of the uterus, and transfusion, closes the 25th lecture. Accidental hemorrhage is somewhat briefly considered. The author condemns turning, as a rule, and prefers puncturing the membranes; the giving of ergot of rye, with, if necessary, opium, of which the quantity is to be increased in proportion to the exhaustion; and speaks rather favourably of the use of the electric current.

Placenta previa is more fully considered. The natural means of checking hemorrhage from placenta previa, and the effects of dilatation of the cervix and os uteri, on the source from which the blood flows, are very clearly and correctly given; and he arrives at the following conclusions :—

“The natural means, therefore, of checking unavoidable hemorrhage is the complete separation of the placenta from its attachment to the cervix of the uterus; because, by this means, all the uterine arteries are broken off from the placenta, and the veins are closed by the dilatation of the uterus, which is necessary to effect the separation. If we have rendered the designs of nature sufficiently intelligible, you can readily perceive why she so often fails in accomplishing her purpose, and why these hemorrhages are so dangerous. In order to effect the dilatation of the uterus, and carry out this intention, the pains must be vigorous and the contractile power of the uterus unimpaired; but, unfortunately in too many cases, this essential element is wanted.”

The manner and extent of attachment of the placenta—the

symptoms and diagnosis are succinctly rendered. Respecting the treatment, Dr. Murphy considers it under two heads:—1. Cases where hemorrhage is only commencing; 2. Cases where the patient is in extreme exhaustion. In the treatment of the first class, he recommends compression of the placenta—that is, pressure from below, by plugging the vagina, and from above, by puncturing the membranes, and bringing the head down on it, and, at the same time, stimulating the contractions of the uterus; and, when it becomes possible, turning and delivering. In the second class, however, a different system must be pursued. Here the patient is in a state of extreme exhaustion; and Dr. Murphy narrates several instructive cases to show that immediate turning and delivery would be attended with fatal consequences. The following extract conveys, in a dogmatic form, his directions as to the treatment of such a case—directions that carry with them, in the main, our full concurrence; but here, again, we have to notice a total ignoring, on Dr. Murphy's part, of a modern improvement—we mean Dr. Barnes' suggestion—of separating the placenta from the cervical zone merely of the uterus—a practice that we believe to be, in many cases, preferable to its total separation.

“If it should unfortunately happen that you are called to a case of extreme exhaustion—if you find your patient almost pulseless, with cold extremities, cadaverous countenance, perhaps tossing herself about the bed, in the effort to breathe—we have no hesitation in telling you to remove the placenta at once; to plug the vagina immediately afterwards; to give her a large dose of laudanum (forty minims) in brandy; to support in every way the temperature of the surface; and, if you find the action of the uterus still feeble, you may try the electric current to promote its action. (We presume, of course, that the apparatus has been previously prepared for you.) But should the pulse be restored, and reaction at all take place, we think you will find that a full dose of ergot of rye will sufficiently answer the purpose. We do not ask you to remove the child even then, because we are very doubtful that any advantage is gained by doing so. The source of hemorrhage is not at the fundus, but in the cervix uteri, exactly where it is compressed by the head of the child on one side, and the plug at the other; which, it appears to us, will far better control any subsequent bleeding from the sinuses than the removal of the child from the cavity of the uterus. Besides, there is a double risk in such an operation: your patient may be unable even yet to bear the shock that we know it produces, notwithstanding the reaction and signs of amendment. It is also doubtful, as

we have stated, whether the sudden emptying of the uterus might not be attended with fatal consequences, when the pressure is suddenly taken off the great venous trunks in the abdomen, which are imperfectly filled with blood. It might be thought unnecessary to plug the vagina after the removal of the placenta, inasmuch as hemorrhage ceases on its separation. We advise it as a *precautionary* measure, to meet the possible contingency that hemorrhage may occur. There is no rule without its exception; and although in ninety-nine cases no flooding may follow, in the hundredth you may regret not having plugged the vagina."

In the chapter on post partum hemorrhages, flooding occurring during the third stage of labour is most ably treated of; but, when considering secondary hemorrhages, Dr. Murphy falls into his habitual error of neglecting the labours of the modern Dublin school; and while he discusses the subject briefly, and very insufficiently, he passes over in silence the very important essay on the subject by Dr. M'Clintock, published in our eleventh volume, a neglect shared by the equally valuable and learned essay by the same author on sudden death, a subject not touched on at all by Dr. Murphy.

We cannot, in the space at our command, do more than allude to the very excellent lectures on puerperal convulsions, rupture of the uterus, post partum inflammations, puerperal fever, and phlegmasia dolens, all of which will amply repay even the most experienced practitioner for a perusal; and, notwithstanding our criticisms, we must conclude as we have begun, by expressing our highest commendations of the general character of the work.

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1. *Medical Climatology; or, A Topographical and Meteorological Description of the Localities Resorted to, in Winter and Summer, by Invalids of Various Classes, both at Home and Abroad.* By R. G. SCORESBY JACKSON, M.D., F.R.C.S.E., &c., &c. London: Churchill. 1862. 8vo, pp. 509.
  2. *Bradshaw's Invalid's Companion to the Continent; comprising General and Medical Notices of the Principal Places of Resort; with Appended Observations on the Influence of Climate and Travelling, and Meteorological Tables.* By EDWIN LEE, M.D., &c., &c. Second Edition. London: Adams. 1861. pp. 416.

- 3 *The Winter Climate of Menton; with Hints to Invalids Intending to Reside There.* By P. C. PRICE, F.R.C.S.E., &c., &c. London: Churchill. 1862. 12mo, pp. 79.
- 4 *A Notice of Menton; with Remarks on the Influence of Climate in Tuberculous Disease.* By EDWIN LEE, M.D., &c., &c. London: Adams. Pamphlet. 12mo, pp. 43.
- 5 *Menton, Essai Climatologique sur les différentes regions.* Par le DR. J. F. FARINA. Paris: Baillière et Fils. 1863. Fcap. 8vo, pp. 72.
- 6 *Mentone, The Riviera, Corsica, and Biarritz as Winter Climates.* By J. H. BENNET, M.D., &c. Second Edition. London: Churchill. 1862. Post 8vo, pp. 288.
- 7 *Nice et son Climat.* Par EDWIN LEE, M.D., &c. Paris: Baillière et Fils. 1863. Fcap. 8vo, pp. 162.
- 8 *The Climate of South Devon, and its Influence upon Health, &c., &c.* By THOMAS SHAPTER, M.D. Second Edition. London: Churchill. 1862.

THE consideration of *climate* comes before the scientific physician under two distinct aspects, according to the influence which it exerts, either in causing or in curing disease. The former of these, however interesting and however important, we can at present take no account of. At one time it occupied much more of the attention of the British physician than the other, as is evident from the numerous and learned dissertations which have appeared on the subject, from that of Hippocrates downwards; but the work recommended to Sydenham by Dr. Brady has yet to be written—an account of “the force and influence of the atmosphere upon human bodies.” Dr. Ransome’s paper “On the Influence of Atmospheric Changes upon Disease,” in the last number of the *Manchester Philosophical Transactions*, would form a suitable introduction to such a work; and the classical work of Sir Ramald Martin, which we noticed in our last volume, would form no small element in its composition.

Dr Jackson’s book introduces us to the latter part of the subject—the effect of climate in *curing* disease.

There is a very considerable defect in this work at its very commencement—the absence of a table of contents; a rather serious omission, where the work extends to 16 chapters, and 509 pages, and which cannot be compensated by any index, however excellent. The first four chapters comprise a sketch of the causes of physical climate, the doctrine of hygienics, the nature and value of mineral waters, and a sketch of the diseases in which change of climate is commendable as a remedial agent.

The remarks on the causes of physical climate, although brief, are well worthy of perusal. We gladly observe the author passing by the old routine of recording the mean temperature, and the quantity of rain that falls in each locality, but dwelling on the fact that extremes of temperature, or even sudden transitions of not very extensive character, are amongst the most productive causes of disease. “When, therefore, we are contemplating a change of climate for the alleviation of bodily infirmities, it will be one of our chief aims to select a locality wherein vicissitudes of temperature are at a minimum. And it is important to know not only the mean annual temperature of places, but also that of the seasons, months, and days; for the average yearly temperature of any two places may be exactly alike, whilst that of their seasons may differ widely.”

The chapter on change of climate as a remedial measure, commences by prudently insisting on the necessity for regarding this agent rather as a medium through which a cure may be wrought than as the direct instrument by which the improvement is to be effected. As Dr. Jackson expects his work to be perused by *non-professional* readers, his warning is very properly inserted, as many imagine that the *climate* once reached, the cure will surely follow.

The same theory is less figuratively enunciated by Dr. Lee, the entire of whose “remarks” consist in deducing authorities to prove that the “principal advantage which invalids derive from a winter’s residence in a favourable climate consists in their being able to take daily and sufficient exercise in the open air.” Even in its most extended sense we doubt much the soundness of this statement; and, although we cannot fully recognize what Simon terms the antitubercular power of an increased venosity of the blood as the consequence and effect of change to a warmer temperature, still we look upon climate as having essentially a most material influence for and against the development or progress of tubercle.

Change of climate has long been known and valued as a most useful therapeutic means, but until lately was considered as being within the reach of the opulent only; and therefore comparatively few physicians troubled themselves to investigate on what grounds sanitary influence could fairly be expected from it.

In the enumeration of the diseases in which change of climate is commendable, all chronic diseases and all the sequelæ of acute disorders are included by Dr. Jackson. We are disappointed in finding so small an amount of information on the subject of the various bronchial affections, and their sequelæ, although the subject of them is introduced by the assertion that they are amongst those to which change of climate is most beneficial. The author evidently hurries on to the consideration of *phthisis pulmonalis*, to which naturally he devotes the most consideration.

The influence of climate on *phthisis pulmonalis* is a subject upon which, in some of its various forms, the practical physician is now almost daily consulted—first, by those threatened with organic disease, and, secondly, by those in whom the lungs have already undergone some change of structure.

Dr. Jackson wisely insists that, in selecting a situation for a consumptive patient, the complications of the disorder must be first understood before a judicious choice can be made; and then passes on to consider in what stages of pulmonary consumption change of climate may be judiciously recommended. This question, so often agitated, he answers by claiming a broad margin for discretion, and then adding, that “perhaps, as a general rule, it would not be well to urge change of climate upon those persons in whom the disease has manifested itself rapidly—in whom, although but little of the lung may be implicated, there is a tendency to inflammatory symptoms upon the slightest provocation, and when the tuberculous deposit rapidly passes from the crude into the softened state.” All practitioners, we presume, will agree that in such cases change of climate is not to be recommended; but we look for more direct and more useful information, at the present day, from authors who lay claim to such extensive experience as Drs. Jackson and Lee, than a mere repetition of what was so clearly laid down by Dr. James Johnson more than 30 years ago. From such authors we expect information as to the advisability, or otherwise, of change of climate in what we may term the accidental forms of *phthisis*; and, if it be advisable, in what form it should be undertaken, and what country selected, and, what is most important, the effect of such treatment

as evidenced by physical signs, as well as general symptoms, on the fibriniform product. There are also other very interesting points on which we naturally look for information in these works on medical climatology, but look in vain—such as the effect of climate in warding off consumption where hereditary tendency, or the occurrence of those diseases upon which it is known so often to follow, have rendered its occurrence more than probable; but after all Dr. Scoresby Jackson's work is what it aspires to be—a very good book of reference, whereby physicians may readily become acquainted with the predominating features of particular climates. Such a book has become necessary by the advance of medical science, which now treats the predisposing causes of disease as well as the actually formed malady—or, in the words of the author, “Preventive medicine is at length taking up a position commensurate with its value, and it is fostered by the remarkable facilities which now attend the traveller in his wanderings over every part of the world.”

The last 12 chapters of Dr. Jackson's work are devoted to the consideration of the medical climatology of almost all the countries in which the English physician can possibly take interest. He considers, in detail, beside all the continent of Europe and the British isles, Algeria, the Cape of Good Hope, the islands in the Mediterranean, the West Indies, Egypt, &c., &c.; and the information given upon all these countries is both varied and extensive, and, what is more important, very accurate. Many circumstances, which at first seem trivial, but which to the traveller possess great importance—such as the form of clothing suitable to each country, diet, &c., &c., are fully but not diffusely considered. The chapter on Algeria we would specially recommend to the notice of our readers, as containing an amount of information not to be procured elsewhere, on the medical climatology of this region, which has deservedly obtained, of late, so much reputation in the medical treatment of chronic diseases of the lungs.

Dr. Edwin Lee's and Dr. Price's works will be found valuable as local guide-books. We believe Menton to be much over-rated as a winter residence for invalids; it is very subject to their great bane—sudden changes of temperature; and although considerably improved, it still lacks many of those comforts which our countrymen consider essential; but Dr. Bennet, who has himself derived much benefit from residing there during three winters, speaks very highly of it. His work not only gives a good account of the district, its

beauties, its climate, its geological formation, and vegetable and floral productions, but also much information likely to be useful both to patients about to go there and to their medical advisers. Dr. Bennet also gives an account of his attempts to find a still better winter residence than Menton, and of his failure to find one so suitable to the state of his own health.

We have scarcely allowed ourselves space for examination of the work on the climate of South Devon; and yet it is worthy of more than a passing notice. The author exhibits great industrial power, and great reflection upon all the materials which he has accumulated. The work is divided into eight chapters. The first considers in detail the climate of the South of Devon, and is illustrated by a series of tables setting forth the local indications of thermometers, attention being specially drawn to the indications of the wet-bulb thermometer, barometers, rain-gauges, &c., &c. These investigations, conducted principally at Exeter, extend over a very long period; for instance, we have the calculation of temperature for 30 years; of the highest and lowest range of the barometer extending over 40 years; and the fall of rain from 1817 to 1860. The general position, physiognomy of the district, &c., &c., are considered; and the chapter ends with a comparison of the climate of South Devon with that of London and other places.

Recognizing the axiom, that on land the temperature mainly depends upon the nature of the soil and its products, its habitual moisture or dryness, Chapter II. is employed on the geology and hydrology of the district, and contains much valuable information, and would form a perfect guide to even a practical geologist through this classical district—although the author modestly styles his description “a mere sketch illustrative of the main object of the book.” It is accompanied by a very graphic map.

Chapter III. considers in detail the principal island and sea coast towns of South Devon.

Chapter IV., its natural productions.

Chapter V., its civil and economical history.

Chapter VI., its vital statistics.

Chapter VII. extends over nearly 100 pages, and gives a very full and most interesting account of the diseases of South Devon, commencing with an account of its epidemics. The record of those within Dr. Shapter's own experience even is of great value.

In 1825 we find that inflammation of the serous membranes was exceedingly prevalent, and that peritonitis in its severest forms was

of common occurrence. This is a most rare form for epidemic disease to assume, unless connected with the puerperal state, which it appears not to have been. The various epidemics of cholera, influenza, small-pox, typhus fever, diphtheria, &c., &c., are all more or less carefully recorded. Among the individual cases alluded to are several of which we would gladly read the details—such as cases of embolism, occurring in the years 1844 and 1853, when the disease was comparatively unknown, and two cases of pneumopericardium which appear to have been idiopathic. When we meet with an author of Dr. Shapter's experience and judgment we naturally look for his observation on that *vexata quæstio*, the change of type of disease; and although the following paragraph contains nothing absolutely new, still we are anxious to record it, as forming a connecting link between the two periods of the *mild* as contradistinguished from that of the *heroic* medical treatment:—

“The general aspect or type of disease has, within my own observation, partaken of two very separate and distinct characters. During the few years immediately preceding 1828, the tendency of disease was to be inflammatory, having a sthenic or phlogistic character. The serous membranes were then very prone to become the seat of active disorder; thus cases not unfrequently presented themselves of pleuritis, peritonitis, and, amongst children, of hydrocephalus, all exhibiting a type of disease requiring the most prompt and occasionally persevering phlogistic treatment. Since that period, however, the aspect of disease has materially changed. It has become essentially adynamic or asthenic, while diseases of serous membranes have given place almost entirely to those affecting parenchymatous structure, or the mucous membranes; and these have required a medical treatment rather mild than heroic: experience soon showed that the type of disease had changed, and that the method of cure previously requisite was now anything but applicable. In fact, while thirty years ago, diseases generally, not only bore, but required free evacuation by bloodletting, aperients, &c., latterly this method of treatment has not only been contra-indicated, but would, if adopted, have been promptly followed by fatal results. Of this occasional alteration in the type of disease an illustration may be offered, which is not only interesting in itself, but bears testimony to that which prevailed seventy years ago, being then somewhat of the same character as that now prevailing. My friend and preceptor, the late Mr. Benjamin Johnson, surgeon, of Exeter, a man remarkable for sagacity and powers of observation, whilst bleeding a patient freely in 1820, observed to Mr. Woodman, then his pupil, now a medical practitioner in this city, that ‘if one had bled thus thirty years ago, every patient would have died.’”

In Chapter VIII. is considered the climate of South Devon in reference to its general effects in disease. In one point of view this is the practical chapter of the work. The physician wishes to know what are the diseased conditions which will be cured or remedied by a residence in South Devon. The disorders which Dr. Shapter considers most likely to derive benefit from Devonshire climate are especially:—1. That irritable state of the lungs which precedes the development of consumption, and which Sir James Clarke so minutely described under the title of tubercular cachexia. 2. The inflammatory or gastritic form of dyspepsia, of the symptoms of which a very excellent *resumé* will be found. 3. Those peculiar forms of specific constitutional decline which, occurring in the middle period of life, Sir Henry Hallford termed “climacteric disease,” but which are also found in early life attendant upon a too rapid growth, and occasionally in more advanced years. In these cases the climate of Devonshire proves of the most essential service. Very valuable information will be found as to its effects on various other diseases.

We have thus concluded the pleasing task of giving a very full analysis of Dr. Shapter's volume, which we consider to be a very valuable addition to our standard literature of climatology. Limited in its object, it almost completely attains to it. And yet “the climate of the South of Devon, and its influence upon health,” is no trivial subject for investigation. *Local* histories, no matter what their immediate subject may be, are of all the most valuable; they are, in general, most accurate, and by far the most interesting. We know of no book which, as far as its scope reaches, has ever obtained the deserved admiration with which *The Parochial History of Selborne* is to this day viewed; but such works as Dr. Shapter's, besides the immediate information which they convey upon any required point in the natural history, or physical condition, or diseases of the district, are of the most essential service, as affording the real ground-work upon which, mainly, that structure will eventually be built—the knowledge of the causes which affect the prolongation of human life.

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*The Preventible Causes of Epidemic Disease.* By W. J. COX, M.R.C.S., &c., &c. Dublin: Falconer. 1862. 8vo. pp. 24.

THIS able essay, by Mr. Cox, is well calculated to arouse attention

to the subject of which it treats, and we should be glad to hear of its having a large circulation amongst all classes of society. The preventible causes of disease are arranged into two classes: first, those of a physical, and second, those of a social or moral origin. Under the first head are considered, over-crowding, defective drainage and ventilation, the use of foul water, and privation of solar light. Under the second, intemperance, filth, neglect of infantile life, and unhealthy occupations. Many striking examples of the influence of these causes are given, and appropriate remedies are suggested; and we think that Mr. Cox has, by the publication of this pamphlet, faithfully performed one of the most important duties that could devolve on him as medical officer to the Sodbury Union.

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*Familiar Letters on the Diseases of Children, addressed to a Young Practitioner.* By JAMES BOWER HARRISON, M.D., &c. London: Churchill. 1862. Fcap. 8vo, pp. 197.

THESE letters are supposed to be written by a senior practitioner to a young friend, as it is imagined that this form of composition may allow a degree of freedom which otherwise might be out of place, and the author's object has been, he says, not to offer original matter, but to endeavour to supply what is useful and practical.

There is a certain *tactus eruditus* which distinguishes the experienced practitioner, a *savoir faire*, the want of which is, as we see daily, the cause of the failure of many very learned and scientific physicians. The great object of Dr. Harrison's book is to teach this; and, so far as it can be taught by books, he has well accomplished his purpose.

There are many very valuable practical suggestions throughout the book; but the author, whose name is already well known to the readers of this Journal by his contributions to its pages, himself acknowledges in the preface that the work is not to be regarded as aiming at being a *complete* treatise on the diseases of children, and we think that, in the desire to avoid what he calls "*hair splitting*," Dr. Harrison has erred greatly by falling into the opposite extreme, and we regret to find him speak disparagingly of the attempts of physicians to distinguish the minuter variations of disease.

## PART III.

### MEDICAL MISCELLANY.

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*Reports, Retrospects, and Scientific Intelligence.*

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#### REPORT ON PSYCHOLOGICAL MEDICINE AND DISEASES OF THE NERVOUS SYSTEM.

(Continued from Vol. xxxiv., p. 438.)

##### MANIA.

*Mania alternating with Melancholia.*—Annales Medico Psychologiques.

M. Delaye proposes to designate this form of mental alienation "*Folie à formes alternes*."—By Willes it was named "*Mania alternating with melancholia*;" by Esquirol and others, "*Follie intermittente*;" "*Folie a double forme*," by Baillarger; "*Folie cereulaire*," by Falret; "*Folie periodique*," by Morel. This affection, which has exercised the ingenuity of psychologists in inventing names, has been the subject of special study by M. Delaye.

He has come to the following conclusions:—

1st. There exists a form of insanity for which the designation *Folie à formes alternes* is proposed. 2nd. It is characterized by the existence of two distinct periods, which may alternate, with or without intermission. 3rd. These periods present two conditions diametrically opposite to each other. 4th. Each of these periods, or stages, has an ascending and descending course. 5th. The disease is of frequent occurrence. 6th. In the expansive period among other symptoms are erotomania in all its degrees; a disposition to vilify, and a tendency to acts which simulate swindling: in the period of melancholic depression, the ideas which predominate are those of suicide. *Folie à formes alternes* is a slow disease, and, so to speak, progressive. 8th. The augury is to the last degree unfavourable as to the termination of the disease. 9th. Like the majority of mental maladies a special cause cannot be assigned. 10th. Although it

presents in certain cases, and at the acme of intensity of its period, the characters of monomania, folie à formes alternées is a reasoning madness, or without delirium; with respect to the nature of the disease, it is a lesion of the cerebral functions. 11th. The knowledge of this affection is most important in a medico-legal point of view. It renders persons irresponsible for their acts, and takes away moral liberty during the morbid periods.

In the interval they should be amenable to the law, with, however, attenuating circumstances.

*Homicidal Mania.*—Under this title Dr. Yellowlees, Assist. Phys. to the Edinburgh Asylum, communicates to the *Edinburgh Medical Journal* for August last, the biography of, he says, the most interesting patient he has ever known; and appends some physiological and medico-legal comments of great value, which we extract with the leading features of the case:—

“William Smith was for more than twenty years the most remarkable and most dangerous inmate of the Royal Edinburgh Asylum; the story of his life is worth telling for its own sake; but yet more so for its physiological interest, and for its bearings on some very important and much debated questions in legal medicine.

“Smith was the son of a joiner in Bristo Port, Edinburgh, and was born about the end of last century. He followed his father’s occupation, served his apprenticeship in his father’s workshop, and in course of time assisted him in carrying on the business.

“For some reason or other, young Smith was led to turn his attention to a special department of the trade, and ere long his ingenuity and skill as a workman procured for him some local reputation as a printers’ joiner.

“From working among printing presses, type cases, and printing frames, Smith conceived the bold idea of becoming a printer himself, and not a printer alone, but author, printer, and publisher too. He had already attempted authorship, and had produced some doggerel rhymes on various subjects, but you may imagine the difficulties with which he had to contend in carrying out his plan; yet in spite of the delay in making his printing press, in spite of his ignorance of the art of printing, in spite of the expense of types and paper in those days, in spite of his inexperience as an author, and his obscurity as a publisher, the young joiner struggled on unwearied and undaunted; his friend Austin, a wood-engraver, furnished him with illustrations, and at length, about the year 1820—twelve years before the first number of *Chambers’s Journal*—there issued from the humble press at No. 3, Bristo Port, his first illustrated sheet, price one half-penny—the earliest herald of that wonderful illustrated cheap literature which educates and blesses our land to-day.

“The attractions of literature appear to have increased in the eyes of the young author, and to have induced him to choose a more intellectual occupation, and one which would leave him greater leisure to devote to his literary labours; for we find him after a few years forsaking his bench and commencing a school in the Cross-causeway; he taught ‘the three R’s’ and book-keeping, and was for about seven years a laborious and successful teacher. He gave much attention to music also, frequently officiated as precentor in Greyfriars’ Church, and published a collection of psalm tunes, with instructions in the theory and practice of psalmody.

“During all these years, as well as subsequently, he continued to publish, at short intervals, songs, stories, biographies, humorous extracts from books, notices of eminent men, witty dialogues, and poetry in all kinds of measures, and on all kinds of subjects—forming a large and very miscellaneous collection.

“But with the success there came also its invariable alloy; for no sooner did Willie begin to realize his hopes of becoming a publisher than he began to experience the annoyances, the malevolence, and the persecution which followed him, as he believed, throughout the rest of his life.

“His grievances seem to have begun in the nickname of “Whisker Willie,” given him very likely by his own scholars, on account of the unusual quantity of hair he wore on the face. He was much annoyed when this name was shouted after him on the street; and at length summoned before the Police Court a person who had thus provoked him. The magistrate dismissed the case as frivolous, or at least did not decide as Willie had expected, which of course confirmed his belief that he was persecuted, and was the occasion of the first public manifestation of his insanity; for soon afterwards, while the magistrate was officiating as an elder on a sacramental occasion in Greyfriars’ Church, Smith stood up in the midst of the congregation and assailed him with reproach and reproof for his partiality, hypocrisy, and unjust judgment.

“In consequence of this conduct, a warrant was issued for his apprehension, and he was confined, at first in the police cells, and then for ten days in the old ‘Lock-up,’ as it was called, which is frequently and emphatically stigmatized in his writings as very remarkable for its filthiness, and for the number and size of the parasites which infested it; while here his insanity was recognized, and he was then sent to the West-Kirk Bedlam. There, notwithstanding all the care of his attendants, he obtained and kept secreted about his person a sharp dagger, made by grinding a triangular file to a point, with which ‘he was going to revenge himself, but on nobody in particular.’ From the Bedlam he was sent to one of the private asylums at Musselburgh; but his stay here must have been very short, as we find him soon afterwards opening a shop as a bookseller and publisher in Edinburgh.

“Smith’s old notoriety and old nickname still clung to him however; and the latter was now aggravated into ‘Daft Whisker Willie,’ in consequence of his residence in the asylum. His former ideas as to malevolence and persecution returned in full force; indeed, they seem never to have been entirely absent, but only in abeyance for a time, and he was constantly summoning persons to the Police Court for trivial injuries or imaginary wrongs.

“These cases were either put aside as frivolous or decided against the complainant; this of course confirmed or aggravated his notions as to the persecution he endured, and made him yet more impatient of the nicknames or mischief which the children of the district freely indulged in towards him.

“In 1836, or thereabouts, he removed from Nicolson-street to Smith’s-court, Cross-causeway, and worked chiefly as a joiner and toy-wright.

“Change of residence did little to mitigate his annoyances; he was still an occasional complainant at the Court, but with as little justice as formerly, and the idea of personally exacting the vengeance which the law denied him as justice, became uppermost in his mind; he began to collect swords, fire-arms, and similar weapons in his house, apparently without any definite object or idea, except the vague one of revenge. He said ‘that if he could just get blood shed he would be satisfied, but that he must kill somebody.’

“Once more, and for the last time, we find him a complainant at the Sheriff-Court in 1839; but this case also was dismissed, and he now ceased to seek or expect justice at the hands of the authorities. His indignation settled itself chiefly on Sheriff Tait, whom he blamed above all others for the oppression and injustice to which he was subjected.

“The Sheriff was far from being the only object of his hatred and revenge; he detested and vowed vengeance upon all in authority, but especially upon the police force, the members of which he regarded as his bitterest enemies. Yet he seemed fully aware—and this secret consciousness of their condition is often seen in the insane—that something in his own behaviour did or might require their interference, for he began to fortify his house as if to resist their entrance. He had a sliding panel in the door, by which he could see or speak to any one without opening it, and a contrivance for barricading it, so that it could not be forced open; he had also a long spear with which to defend the entrance, and fire-arms which were always kept loaded.

“He was committed to the prison of Edinburgh as a dangerous lunatic in December, 1840. In March 1841, he was removed to the lunatic wards of the West-Kirk Workhouse, under the idea that he could be safely confined and cared for there; but this idea was soon dispelled, for before two months were over he murderously assaulted Dr. Deas, the medical officer of the workhouse, at his professional visit. On the

doctor's entrance, Smith spoke to him in his usual friendly manner; but, when he was about to leave the ward, suddenly attacked him with a shoemaker's knife which he had procured; he chased him down stairs, weapon in hand, wounded him slightly in the back, and it was only his accidentally stumbling, in his eagerness to strike another blow, that saved the doctor's life.

"He was now removed to Morningside Asylum, where he was treated by Dr. Mackinnon, the then superintendent, with much consideration and kindness. He was put under no personal restraint, and was granted as much freedom within the walls as was consistent with his safe custody. He obtained facilities for writing a more detailed history of his case, his taste for music was encouraged, and he was allowed to conduct the psalmody at morning prayers.

"At first this treatment was apparently beneficial. Although his belief that he was the victim of persecution and injustice was unchanged; and although he daily vowed vengeance on those who were the authors of his wrongs, he used neither threats nor violence to the Asylum officials.

"After about a year's confinement, however, he manifested his belief that they also were implicated in the oppression he had endured, and began to threaten vengeance of the direst kind; these threats were directed chiefly against Dr. Mackinnon and his assistant, both of whom he declared he would murder. Additional precautions were therefore used, and he was more closely watched than formerly; but in spite of this vigilance he managed one day to pick up in the grounds a pointed rod of iron, which had apparently served as the spindle of a spinning-wheel, and had probably been turned up by the plough-share. Recognizing its fitness for his purpose, he concealed it about his person, sharpened the point in secret, wrapped a strip of a blanket round the other end of it for a handle, and then kept this formidable dagger in various hiding-places for no less than three months—as he himself subsequently confessed—deliberately waiting till he could get an opportunity to use it effectually. This opportunity at length offered itself in June, 1842, when Dr. Mackinnon and his assistant entered the ward one morning in the accidental absence of the attendant. Smith at once embraced it, and, without the slightest warning, suddenly sprang on the doctor, when his back was turned, and stabbed him repeatedly with the dagger. When the assistant-physician, Dr. Douglas, rushed forward to his help, Smith attacked him in the same manner, and wounded him in several places, striking so fiercely that the note-book which he was carrying was pierced through by one of the blows. The attendant, hearing the noise, hastened to the ward, when Smith 'ran into his room, threw the weapon out of the window, and resigned himself to his fate, fully believing that he had killed his victims, and that his own life must pay the penalty of his crime.'

"Fortunately, none of the wounds were dangerous, and both the doctors recovered to care for the man who had well-nigh murdered them.

"This assault was only the manifestation of a revenge and blood-thirstiness which had long been slumbering; even at the time of admission the same fierce desire for blood possessed him; and he often told afterwards that many a time when Dr. Mackinnon was conducting morning prayers, and he was sitting near him as precentor, he 'could scarcely keep from rising and braining the —— with the chair he was sitting on.' He always gloried in this murderous attack, and only lamented that he had not been more successful.

"Increased precautions were now taken; but in spite of all he made numerous attacks on his attendants, another of which we quote, as it shows well the deliberateness and cunning with which his plans were made. While walking in the airing court, in 1854, he picked up, quite carelessly, some cuttings of lead, which had been allowed to fall there by workmen who were repairing the roof; these scraps he carefully secreted, then tore away a large piece of lead from the water-closet, and kneaded the whole into a heavy ball; this ball he enclosed in a network of strings, shoe-laces, strips of handkerchiefs, &c., and fastened it loosely to the end of a short stick—thus forming a heavy life-preserver. The secret fabrication of this weapon must have occupied him for months, for all was done in spite of the closest vigilance; and we can imagine how he lightened his anxiety in constructing it, by glorying in the anticipation of the bloody vengeance it was to procure. When the weapon was ready for use, he waited until it was the turn of a certain attendant whom he specially disliked, to make the night visit. When this night arrived, Willie stationed himself behind the door of his room, and quietly waited for his entrance; when the attendant was opening the door, Willie suddenly stopped it with his foot, so as to prevent it from opening further, and the man naturally put in his head to see what was holding it; this was exactly what Willie had calculated on, and he bestowed on the instant a murderous blow with his weapon. The man was severely injured, and a large piece of the scalp was detached, but he was still able to struggle with Smith, and had overpowered him even before the noise had brought others to his help.

"Smith was now constantly confined to his room, except for an hour daily, which he spent in the airing court, under charge of one or two attendants. He was as querulous, irritable, and dangerous as ever, but spent a great deal of time in writing to the Sheriff and others, an account of his 'seven new inventions,' and offering half of the profits to any one who would liberate him. These new inventions included the discovery of perpetual motion, and other schemes equally extravagant; they constitute the first very obvious manifestation of intellectual insanity, supervening on the moral perversions he had laboured under so long.

“On the appointment of a new physician to the Asylum in 1846, Willie confidently hoped to obtain justice and liberty. He wrote, for Dr. Skae, a very full account of his life and grievances, described with much ingenious colouring his murderous attacks on his former medical attendants, and said that he would give the new doctor a definite period to judge of his case, and make up his mind about it, before pronouncing his curse upon him.

“When he found that he was not to be liberated, his indignation knew no bounds, and he gave notice that on the twelfth day of the following month he would kill one of his attendants.

“In consequence of this threat, and the terror which it inspired, in consequence too of the perseverance, cunning, and ferocity which it was known he would use to fulfil his purpose, it became necessary, for the first time, to have recourse to personal restraint.

“In the beginning of 1849, restraint was discontinued, except when he was out walking; but mentally he was unchanged, and the same precautions and vigilance were still required. The last quotation from the case-book sufficiently describes his condition in 1850 and 1851, while in 1852 he is said to be, ‘*if possible*, more than ever full of murderous threats;’ and in 1853, the following entry occurs:—‘This day, upon his attendant going into his room, in order to take him out for an airing, he suddenly threw himself forward and tried to grip him by the throat; fortunately, he was secured before he could accomplish his design. In the scuffle a spoon, sharpened at the handle, fell from his bosom. Doubtless, had he succeeded in keeping down the attendant, he would have at once proceeded to dig out his eyes, a threat which he has of late repeatedly uttered.’

“A favourite amusement with him about this period, and one which illustrates well his love for cruelty and murder, was to entice mice into his room, by leaving some of his food near a hole in the corner; he prevented their escape by closing the hole, killed them by tearing them into quarters with his fingers, and had the pieces arranged in a row in the morning to show his attendants how he would treat his enemies if he could.

“In the following year, 1854, he made another murderous attack on an attendant with a weapon similar to the life-preserver formerly mentioned. He had made this one in the same way—a stone which he had picked on the airing ground, in spite of the constant presence of attendants, serving instead of lead. When the weapon was ready for use, and a proper occasion offered, he purposely left some bread on the floor of his room that he might get a better blow at the attendant as he stooped to pick it up. The attendant, however, was on his guard, and drew back in time to save his head, although not his shoulder; a sharp struggle ensued, which was happily overheard by the night-watch, and, with his assistance, Willie was secured.

"It is scarcely possible to find language strong enough to describe the bloodthirsty passion which possessed the man, the devilish ingenuity, deliberateness, and determination with which all his attacks were made, or the fiendish delight with which he gloried in relating them, and revelled in the thought of a merciless and bloody success.

"In 1855 his health began to give way, but he still indulged in fierce threatenings far beyond his power of execution. In this year restraint was finally discontinued, and he was taken regularly, under special charge of an attendant, to the chapel and the weekly ball—privileges which he highly valued. He spent his time chiefly in writing songs, anthems, and choruses, which were the names he gave to miserable attempts at music with original words attached. Upon these he set great value, delighted to rehearse them to the medical officers, and spent many a solitary hour in transcribing them.

"Occasionally days of murderous vows and threatenings varied the monotony of his life; but they were not quite so frequent as they used to be, probably because he had found other occupations now.

"Years passed away thus; and they may be described in a single sentence:—Gradual mental deterioration, with persistent and unquenchable desire for revenge and blood.

"In the end of 1858, he had a slight apoplectic attack, but its effects were very transient and did not alter his mental condition.

"About this time, 1859, Willie was offered the privilege of a visit to Edinburgh. For almost twenty years he had never been beyond the grounds of the Asylum, and had spent most of the time in his solitary room. He was, from old age and increasing dementia, by no means the formidable man he once had been; and it seemed that this indulgence might, with proper precautions, be safely granted, and might add a little happiness to his lonely life. He was much elated at the prospect, and very grateful. He selected the night-watch as the person who should accompany him, and at the time appointed he was ready, dressed in the best suit the attendants could procure. He went to the door full of eager anticipation; but as soon as he saw the carriage waiting for him, and understood that he was not to walk through the town as he had intended, he turned and went straight back to his room, threw aside the new suit, and absolutely refused to go.

"He had evidently intended mischief, and was so mortified at his purpose being thus thwarted under the guise of special kindness, that no persuasion could induce him to change his resolution.

"He still continued to attend the ball regularly, under special charge of an attendant, and was present, by his own desire, at a meeting of the glee club. He did not join in the singing, but said that 'Smith, the critic and victor of singing, could sing them all blind and deaf.'

"In the autumn of 1860 his bodily health began to fail very much;

and, although he recruited a good deal in summer, he was never quite free from bronchitis and asthma. The next winter brought with it great aggravation of his illness; but throughout it all his mental condition remained unchanged, and he might have been seen gasping his vows of murder or his loyal anthems during a paroxysm of dyspnea. It was not in his nature to yield.

“But nature herself yielded at last, and he died, about the age of 73, on the 3rd of December, 1861.

“The autopsy revealed the ordinary signs and sequelæ of chronic bronchitis, as well as many evidences of very chronic brain disease.

“The brain seemed somewhat atrophied and smaller than usual, the cerebrum weighing but  $35\frac{1}{2}$  ounces, and the cerebellum  $5\frac{1}{2}$  ounces. The arachnoid generally was opaque and slightly thickened, but its sac did not contain more than a drachm or so of fluid. The lateral ventricles contained very little fluid, too little to be collected and measured. There were found three very distinct softenings; one about the size of a filbert in the anterior extremity of the right corpus striatum, another of about equal size under the floor of the posterior cornu of the right lateral ventricle, and the third about the size of a field-bean in the centre of the left optic thalamus. They all contained similar semi-fluid matter, of a dirty, greyish-white colour, and were all apparently of old standing. All the arteries of the brain were more or less atheromatous.

“The softenings in the corpus striatum and the atheromatous arteries are well seen in the preparation. The appearance of the softened matter, under the microscope, was just what is usually seen in old softenings—atheromatous vessels, compound granular cells, abundance of fatty granules, molecular matter, and fragments of disintegrated nerve structure.

“Even the skull itself was not exempt from the consequences of this protracted disease of the brain, for it was found to exhibit a pathological change, or perhaps I should rather call it a physiological accommodation, which has never, so far as I know, been certainly observed before. On comparing the cast of the head, taken after death, with another taken about seventeen years before, there was found to be a very remarkable difference between them, not in form only, but also in size, the head having become less during these seventeen years by an amount equal to at least 12 cubic inches.

“A case so singular and so suggestive requires very little in the way of comment, and the remarks suggested by it are put by Dr. Yellowlees, for the sake of brevity and distinctness, under three several heads—physiological, medico-mental, and medico-legal.

“1. *Physiological*.—This remarkable alteration in the size and form of the cranium during adult life deserves special notice. It is generally believed that all alterations in the brain substance which imply diminution of its bulk, are compensated for by the effusion of fluid, so that the entire

volume of the cranial contents is always the same. From this case it would seem that this effused fluid, which we can be very sure once existed in Smith's cranium, may slowly disappear, and the osseous case gradually accommodate itself to the diminished size of the organ it contains. The possibility of such changes in the cranium has usually been admitted, but the author is not aware of any other case where it has been actually observed. The long term of years that must elapse, and the small probability of correct measurements having been taken at first, of course render opportunities for such observations exceedingly rare.

"Dr. Yellowlees gives a series of outlines showing the shape and size of the two casts. The change in form is very marked. It affects, of course, the roof or arch of the skull, the solid base remaining unchanged. It is chiefly obvious in the shortening of the distance between the root of the nose and the occipital spine, and in the change of the corresponding arch. This diameter is nearly three quarters of an inch shorter in the more recent cast; while its arch is correspondingly smaller, and exhibits marked flattening or subsidence in the frontal and occipital regions, with comparatively little change in its parietal segment.

"2. *Medico-Mental*.—We may hope that the progress of cerebral pathology will gradually enable us more frequently to associate certain mental conditions with the occurrence of cerebral disease of certain kinds, or affecting certain particular parts. But as yet this is very often impossible, and we cannot, for example, establish any distinct or necessary connexion between the cerebral softenings and the insanity in this case, however strongly we may believe in its existence. We must therefore be content to look at Smith's insanity from the psychological rather than from the pathological side.

"Homicidal insanity has, nosologically, at least, three distinct forms. The first is *Homicidal Monomania*, properly so called, and consists simply in a morbid impulse to shed blood, for which no reason or motive can be assigned. The impulse may be sudden and irresistible, urging the patient at once to the perpetration of some horrible deed, or it may have the form of a more or less constant and almost irresistible desire to kill. The patient is otherwise apparently sane, but can give no explanation of the feeling, and often bitterly laments it. A convenient object or opportunity stimulates the morbid desire, and its recurrence at different periods in the life of the individual is not infrequent. Besides this desire or impulse, no other sign of insanity can be detected. It is a case of purely emotional monomania—as purely emotional, at least, as monomania can ever be—for surely the mere fact that a motiveless impulse takes possession of a man, and irresistibly urges him to commit acts from which his whole nature would formerly have revolted, or revolts even now, proves of itself that the mind is unsound and weak, by the very absence

of that self-control which in a healthy mind would correct, or restrain, or banish such morbid thoughts.

“As an illustration of the sudden irresistible impulsive form of this disease, Dr. Yellowlees quotes the first of a very valuable series of cases published by Dr. Thomson, of the General Prison, Perth, in the *Edinburgh Medical Journal* for June, 1862. It is the case of a man who murdered his own son by stabbing him with a table-fork with which the child was playing. No premonitory symptoms were known; he became at once intelligent after the act, and under bitter remorse exclaimed, ‘I was impelled by the devil.’ Nearly seventeen years after this attack, the homicidal impulse returned, the patient begged to be secluded from the others, and entreated the warder to shut the door of a fellow patient’s room, ‘for, when passing, he felt himself strongly tempted to rush in and murder him.’ This attack lasted about a week, at the end of which time he said he might now safely be allowed to go about as usual.

“As an illustration of the almost constant and almost irresistible desire to kill, the case of a woman who came to the Asylum some time ago, along with her husband, to consult Dr. Skae, may be mentioned. She said that every forenoon, as soon as her household work was over, and she had nothing to occupy her attention, she was seized with an almost irresistible desire to murder her children. She lamented the horrible feeling, and could in no way explain it, for she loved them tenderly, but was obliged daily to leave them in the house and walk up and down before the door till her husband returned from his work, lest the murderous impulse should prove too strong for her if she remained beside them.

“The second form in which homicidal insanity shows itself to the alieniste is that of *Homicidal Impulses occurring in Melancholia*. This form is allied to the last, but quite distinct from it. There is insanity *already existing* in the form of melancholia, and the homicidal impulse is but an intercurrent phase of it. Illustrations of this type of the disease are found in cases where a despairing mother murders her children, that they may reach heaven in peace, and may never become hopeless and wretched like her; or where a husband kills his wife, and then himself, that they may both be delivered from the gloom and misery with which his melancholy has enveloped their home. It is in this class of cases that homicide and suicide are so often associated; and the homicidal melancholiac has even been prompted to the deed by the hope of being executed as a criminal, and so delivered from the life which he loathes.

“The third nosological form of homicidal insanity is *Homicidal Mania*, strictly so called, where insanity already exists in the form of mania, and where delusion of some kind has occasioned or prompted the murderous desire or deed. The motive or object may be of the most inadequate or insane kind, but it fully justifies the patient in his own eyes, however

frivolous it may seem to others, or however insufficient to justify murder, even had the delusion been true.

"Illustrations of this form of the disease are not infrequent. In the Perth Asylum there was, very recently, a patient who believed that another of the inmates was continually annoying him by mesmerism, and, under the influence of this delusion, he one day assaulted his tormentor so fiercely, that the man died from the injuries he received. And, in the Morningside Asylum, there was lately a patient who almost murdered his son, under the belief that God wished to prove his faith as he did Abraham's of old.

"The murderer may imagine, like a patient at present in Morningside, that she is the messenger of Jehovah, and that the divine glory demands a sacrifice; or, like the subject of the present sketch, he may insanely magnify trivial annoyances into grievous wrongs, which can only be wiped out with blood.

"The author believes these three *nosological* varieties include all the cases of homicidal insanity; but, of course, the classification is not absolute, and the varieties may merge into each other. It would be easy to multiply illustrations, and to quote cases already published, but it is unnecessary, and time forbids.

"In the case of Smith, the homicidal impulses, which were so fierce and persistent, were only the ultimate and farthest development of what was at first nothing more than justifiable displeasure at real annoyances. The natural 'touchiness' of temper which could not bear even a nickname, and summoned a man to the police court for shouting it, can scarcely be regarded in any sense as insanity; but the injustice with which he thought the case was dismissed, and the consequent increase of his annoyances, soon aggravated his irritability into insanity of the most dangerous kind—a mania which was continually thirsting for revenge, and deemed no vengeance, however bloody or cruel, a sufficient satisfaction for the wrongs he believed he had endured. Yet his numberless homicidal attempts were so obviously the result of a deliberate intention to murder, and were planned with such care and acuteness, that, if he had unhappily succeeded in any of his earlier attempts, and had been brought to the bar as a criminal, Dr. Yellowlees thinks it very unlikely that any ordinary jury would have considered him insane.

"3. *Medico-Legal*.—In regard to cases of this nature, the medical jurist is in the position of a judge as well as of a physician. He therefore cares little for nosological distinctions like the above, and inquires rather as to the motives for the act, the person's knowledge of what he was doing at the time it was committed, the existence of other proofs of insanity, and the degree of self-control which the accused was able at the time to exercise—he is aware that there may be an avowed motive, careful premeditation and planning of the deed, a perfect knowledge of

its criminality and of its legal consequences, and yet that the murderer may be insane and not deserving of death. The essential questions in his eyes are the existence of other unquestionable proofs of insanity, and whether the person had at the moment such consciousness of his act and such command over himself that he *could have refrained* from the deed. If he had not such self-control, he is not guilty or responsible in the same sense as other men.

“The law, however, disdains all such refinements, and rejects as worthless the testimony of medical experience. At the second reading of the Lunacy Regulation Bill, the Lord Chancellor lately declared in the House of Lords, that ‘the introduction of medical opinions and medical theories into the subject has proceeded upon the vicious principle of CONSIDERING INSANITY AS A DISEASE, *whereas the law regards it as a fact*, which can be ascertained by the evidence in like manner as any other fact. Therefore we empanel a jury of ordinary men, and call upon them to try the question by proof of the habits, the demeanour, the conversation, and the acts of the alleged lunatic.’

“And this extraordinary speech is only a parallel to the answers given by the 15 judges to a series of questions on this subject submitted to them by the House of Lords in 1843, and suggested by the trial of M’Naughten for the murder of Mr. Drummond.

“The words of their answers may be quoted, as they are brief, and constitute the most important deliverance on this subject.

“‘Notwithstanding a party commits a wrong act while labouring under the idea that he was redressing a supposed grievance or injury, or under the impression of obtaining some public or private benefit, he is liable to punishment. The jury ought in all cases to be told that every man should be considered of sane mind until the contrary was clearly proved in evidence; that before a plea of insanity should be allowed, undoubted evidence ought to be adduced that the accused was of *diseased mind*, and that at the time he committed the act *he was not conscious of right or wrong*. Every person was supposed to know what the law was, and therefore nothing could justify a wrong act, except it was clearly proved that the party did not know right from wrong. If that was not satisfactorily proved, the accused was liable to punishment. If the *delusion* under which the person laboured were only partial, the party accused was equally liable with a person of sane mind. If the accused killed another in self-defence, he would be entitled to an acquittal; but if the crime were committed for any supposed injury, he would then be liable to the punishment awarded by the laws to his crime.’<sup>a</sup>

“By the law, therefore, Smith would certainly have been condemned and executed, had he unfortunately succeeded in any of his homicidal

<sup>a</sup> Brit. and For. Med.-Chir. Rev., July, 1843, page 273.

attempts, for he was perfectly aware of the criminal nature of such deeds, and of the legal penalties they implied, and 'any jury of ordinary men,' testing his condition, as the Lord Chancellor directs, 'by his habits, demeanour, conversation, and acts,' would, in the earlier part of his history, have most undoubtedly pronounced him guilty; yet, surely, the latter part of his life demonstrates that this would have been most unjust, and his execution nothing less than a judicial murder.

"The case of Clark, who was lately tried for murder at Newcastle, in many respects resembles that of Smith, and illustrates well the imperfection of the law in such cases. In revenge for supposed injuries Clark murdered a tax-gatherer on the public street, and on trial for the deed he was found guilty and condemned to die. The medical evidence was strong and clear as to the existence of insanity. The prisoner believed that he was Jesus Christ, and his conduct at the trial, where he conducted his own defence, was certainly very insane; yet the jury, recognizing a motive for the deed, and acting on the principle laid down by the Lord Chancellor, found him guilty of murder; the judge declared his belief that he was responsible for his conduct, and the poor lunatic was sentenced to death.<sup>a</sup>

"Immediately after the trial, as if to put in their strongest light the absurdity and danger of the legal views of insanity, the judge wrote to the Home Secretary to direct attention to the peculiar circumstances of the case, and the strong evidences of insanity; the result of which, and of the steps taken by the public, was the respite of the sentence on that ground. A man who believed himself to be Jesus Christ, was by the law condemned to death as a criminal, and then the Crown was besought to interfere to prevent the law taking its course! The Lord Chancellor is the legal guardian of all the insane in England, and ought, therefore, to be an authority on insanity; but the extraordinary principles he has propounded have received a prompt, opportune, and conclusive answer in the verdict of his model 'jury of ordinary men' lately assembled at Newcastle.

"It is high time that the ridicule and contempt with which medical men are so often insulted when testifying to insanity in courts of law, should be thrown back on those who deserve it. They are regarded sometimes almost as partisans of the criminal, who wish to screen him at the expense of truth and justice, and this by those whose ignorance of mental medicine rather aggravates than excuses such treatment. The state of the lunacy laws generally is very discreditable to the legal profession, and affords very uncertain justice to the criminal lunatic. The question of degrees of insanity with corresponding degrees of general capacity and criminal responsibility, has received far too little attention.

<sup>a</sup> Med. Critic and Psycholog. Journal, April, 1862.

A man may be quite able to go at large and to mix with the world like other men, but quite unable to manage his own affairs with discretion or safety; and another may be quite unable to be at large or to mix with the world, and yet quite able to manage his own affairs with propriety and intelligence. There are surely degrees, too, of criminal responsibility. In one insane person the intelligence and self-control may be so perfect that death would be a righteous penalty for murder. In another, the insanity may be so far apart from the crime, that it would modify responsibility only as evincing a weakened state of the mind generally, and should modify the penalty, not absolve from it. Whereas in others the homicidal act may itself constitute the insanity, or may be so directly connected with delusions that the individual is quite irresponsible.

“‘A jury of ordinary men’ cannot possibly decide such questions, and they will never be satisfactorily settled until medical experts have a more prominent place in their adjudication, and until the law recognizes more distinctly the various phases of insanity, and the different degrees of imbecility.”

*Cerebral Disease in the Course of Syphilis (Medizinische Jahrbücher).*—M. Beyran looks on cerebral affections, as belonging to the class of tertiary symptoms of syphilis, finding them associated with pains in the bones, periostitis, and otitis. The bones of the skull and the spine are sometimes the seat of syphilitic disease, and paralytic symptoms may be caused by pressure on the cerebral parts.

Burdel records a case in which, fifteen years after a primary syphilitic disease, muscular tremblings, pains in the back of the head, attacks of unconsciousness, transitory hemiplegia, and, subsequently, syphilitic throat and skin affections appeared.

Two children of this person were affected with secondary syphilitic disease. Although the patient, when he came under M. Burdel's care, was in a very enfeebled state, his feet being oedematous, and presenting also perforation of the velum palati, he nevertheless recovered under anti-syphilitic treatment.

Blachez and Lugs record a case of meningitis, which ended fatally on the 14th day. The subject was a soldier, aged 28 years, in whom the disease was traced to a syphilitic origin.

*Opium, Digitalis, Stramonium and Haschisch in the Treatment of Mental Disease. (Medizinische Jahrbücher).*—Dr. Winge, in his Report of the Lunatic Asylum at Christiana, gives the results of his experience as to the effect of these remedies. Opium he administers freely in cases marked by exaltation of the brain and nervous system, with precordial anguish and sleeplessness. He begins with moderate doses, and goes on increasing them from one or two grains, morning and evening; and sometimes 14 gr. doses are given before the favourable influence is attained.

The quantity is then gradually reduced until it comes down to one grain, which is continued for some time before the use of it is abandoned. Winge does not participate in the fear expressed by some, that opium, in large doses, produces constipation, and also that it tends to cause the disease to become incurable. After small doses he has sometimes, but rarely, observed slight congestions and a sluggish state of the bowels, which sometimes disappeared of themselves, or after gentle laxatives. The use of moderate doses (4 to 5 grs.) was sometimes followed by vomiting, which often ceased on increasing the dose. It was never found necessary to give up the opium in consequence of the vomiting. Remarkable depression, which is ascribed to opium, was never observed, even after large doses. In torpid persons, with congestions of the portal system, or in persons labouring under disease of the heart or great vessels, and in cases of general paralysis, Winge is unwilling to give opium generally; but when he does, it is in moderate doses, and with much caution. Cerebral congestion has been looked upon as contra-indicating the use of opium; but in low cases, with congestion, opium, in combination with iron and quinine and other tonics, is frequently found the best remedy, the congestion being in many cases produced by excitement, restlessness, and insomnia. When spasmodic symptoms are present, moderate doses of opium are recommended, with oxide of zinc. If the patient is depressed, with a weak pulse and flabby tongue, if he is sad and hypochondriacal, and if there be nothing to contra-indicate powerful narcotics, the acetate of morphia, either at night or twice or three times daily, is found useful.

Digitalis is recommended by Dr. Winge in cases in which the mental disease is associated with organic cardiac affections, and there may be reason to believe that it may be caused by the disease of the heart, and the abnormal activity of the circulatory system; also, according to his experience, digitalis is indicated in those cases in which the disease depends on a sub-inflammatory state of the membranes, or on an exudative meningitis, or when it is accompanied by a such a process.

In hallucinations of sight and hearing, stramonium was given in doses of from 2 to 10 grains of the extract

Dilatation of the pupil and weakness of sight were sometimes produced, which, in some cases, disappeared of themselves, and in others it was found expedient to diminish the quantity. Dr. Winge does not inform us whether the hallucinations were influenced by the stramonium.

Haschisch (cannabis Indica) has frequently been used, and he considers that it may be resorted to with good effect for sad and dejected patients, as he has observed that it has a cheering and vivifying influence.

If large doses be given, or if it be continued for a long period, it has, according to Winge's experience, produced hallucinations, or had the effect of fixing such as may have previously existed.

## SUICIDE.

It appears from the official statistical returns that Denmark enjoys an unenviable pre-eminence with respect to suicide—a fact referred to by Callisen 50 years since:—

From 1845 to 1856 there were 4,430 or 369·2 per annum, which in a population of 1,444,000 gives one suicide for 3,911 persons. In the decennium preceding, the proportion was one in 4,568; there is then an increase. The women form a fourth, as in France, and the greatest number take place in summer. In Copenhagen the proportion is 3·91 in 1,000 inhabitants; in other parts of the kingdom it is much less.

Much maligned England presents by no means a formidable array of suicides. The latest census shows 57 suicides in a million of inhabitants. In Scotland it is 34 in a million.

Prussia is far above Great Britain, the numbers being 109 in a million. Suicidal mania then in Prussia is nearly double as frequent as in England, and nearly three times as frequent as in Scotland.

The following are notes of a paper on this subject, read by Mr. Radcliffe before the Social Science Congress:—

During the five years 1852-56, according to the Registrar-General's returns, 5,415, suicides were committed in this country (including Wales), showing an annual average of nearly six suicides (5·87) to 100,000 persons living at all ages, and of 26 to 10,000 deaths from all causes.

In 1838-40 the annual average of suicides amounted to a fraction more than 6 (6·2) in 100,000 population, and to 28 in 10,000 deaths from all causes. It would seem, then, that in the two periods, 1838-40 and 1852-56, the tendency to suicide was nearly stationary. There would appear, therefore, to be no sufficient reason for the very prevalent belief that suicide has of late years largely increased in the kingdom.

Again, the belief that England is "the classic land of suicide"—can no longer be entertained in the face of these figures. The number of suicides in France, during the seventeen years 1836-52, averaged about 8 (8·3) in 100,000 population—1 in 12,013 inhabitants. In England, as we have seen, the proportion in the two periods, 1838-40, 1852-56, was 1 in 17,039 and one in 16,129 inhabitants. But then the English statistics of suicide are at the best imperfect. The Registrar-General's returns do not show, probably by one-tenth, the whole amount of suicides actually distinguished as such at the time of death.

The Home Office returns of suicide now, however, extend over five years, 1856-60, and show an annual average of (6·7) per 100,000 population, or 1 in 14,906 inhabitants; a proportion in excess of the Registrar-General's returns for 1852-56, still comparing most favourably with those for France.

The positive records we possess certainly show that, as far as our

present information extends, England holds only a second or third-rate position in the suicide scale among civilized nations.

The justness of this conclusion will become still more apparent by a glance at the Prussian statistics of suicide. In 1834, according to Dr. Morel, the proportion of suicides in that kingdom was 1 in 9,941 inhabitants, and in 1843, 1 in 8,081. In the three years 1850-52 the number averaged 38 in 100,000 deaths from all causes. Even France, then, as well as England, must yield the sad precedence to Prussia in this matter, unless the progress of suicide in France since 1852 has been such as to overtake that which had previously been observed in Prussia.

It is very noteworthy that the most recent statistical return on the health of the army shows a proportion of suicides occurring among the troops on the home station more than *double that found in civil life!* The proportion of suicides occurring among 1,000,000 males of the military age (20—40) in civil life, may be estimated approximately, according to the Registrar-General's returns for 1852-56, at 124·6. But the proportion occurring in the troops on the home station in 1859 (20 in a strength of 71,715 men) shows a ratio of no less than 278·8 in 1,000,000! It is difficult to escape the conclusion, even if subsequent returns prove that the proportion of suicide in 1859 was exceptional, that the causes leading to so extraordinary an excess of suicide among the troops at home, and those which have given rise to the recent outbreak of murders by soldiers, have much in common. However this may be, there can be no question that the army returns of suicide confirm the necessity, made too apparent by the late murders, for a careful inquiry into such grievances as may exist among the troops.

The returns of suicide in the navy show also an excess over those occurring in civil life, but not so great as in the army. The average proportion of suicides annually occurring among the sailors on the home station, to 1,000,000 of the strength, was, in the three years 1856-58 135·4.—*Social Science Review.*

## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.<sup>a</sup>

TWENTY-FIFTH ANNUAL SESSION 1862-1863.

MR. HAMILTON, President.

*Cancer of the Breast.*—MR. M. H. COLLIS exhibited a photograph, taken from a woman affected with cancer of the breast for three years. The breast affected, was considerably smaller than the one on the opposite

<sup>a</sup> These reports are furnished by Dr. R. W. Smith, Secretary to the Society.

side. There was great puckering at the nipple, and also in the skin, at a considerable distance from the nipple. This was a form of cancer known as atrophic scirrhus, and was the nearest approach to a natural cure of cancer. It had existed in this particular case for upwards of three years, the general health of the woman being pretty good, except for the anxiety occasioned by the tumour's causing her a considerable amount of pain. There was nothing of what could be called cancerous cachexia in her appearance, nor was she wasted in flesh. In connexion with this case he might mention another, which was an extreme case of this form of scirrhus. He had an opportunity of examining the breast of the lady, after her death from bronchitis. She had been subject to the disease for 29 years. To all intents and purposes it might be called a natural cure of cancer. She lived during that period, enjoying tolerable health, mixing in the highest circles of society, both in Dublin and in London; and no one, except her medical advisers, perhaps, was aware that she had suffered for 29 years under undoubted scirrhus of the breast. The first authorities in London and in Dublin had seen her, and had pronounced upon her case at different periods. Most of them had wisely advised her to abstain from having any operation performed upon it. The *post mortem* examination of the tumour, equally with the history of it during life, and the appearance of it as described in its early stages, proved that it was undoubted scirrhus. Now, it was important to be able to recognize this form of scirrhus. It was known, in the first place, by its reducing the size of the breast. The sound breast of the patient, represented in the photograph, was pretty large, while the diseased one had almost vanished. It was of extreme and stony hardness. It rapidly attached itself to the skin, and then went on slowly drawing down the nipple, and incorporating it and the skin with the tumour, until at last the nipple presented the appearance of a deep-set umbilicus in the centre of the small tumour. The tumour was never large in these cases. The largest tumour of this sort would not arrive at the size of a pigeon's egg. In connexion with the small tumour, which attached itself to the skin, and became by slow degrees incorporated more and more with it, there were almost always fibrous bands of considerable density to be found, running more particularly in the direction of the lymphatics, towards the axilla, and drawing the nipple and gland upwards and outwards in the direction of the armpit. Such were the characters by which this tumour was to be known, and which, as long as they were present, warned the surgeon not to meddle with it. This, as he said, was the nearest approach to the cure of cancer, arising from the operations of nature; but sometimes, either from internal causes, or, more frequently from external injuries, a tumour possessing this character at the outset takes upon itself a more active development, and there might arise within a tumour of this kind—resulting from a blow or effusion of blood—a

fresh centre of active development of cancer; and the original tumour, which, if kept from injury, might have lasted the patient's life, or for many years, might be thus lit up into an activity, probably rapid in proportion to its previous chronicity. These cases, therefore, should be kept under observation. The patient should be warned and guarded against the affected part being suffered to sustain any injury, and also to give notice of any increase in the size of the tumour at any time, as surgical interference would then become necessary.—*January 10, 1863.*

*Cancer of the Stomach and Intestines, and of the Uterus and Ovaries.*—**DR. LAW** observed that the pathological specimens he was about to exhibit were taken from the body of a woman, aged 48, who had died in Sir Patrick Dun's Hospital a week since. She had been married, but had no children. Her previous history was, that she had had for years a "weak and windy stomach," but had never been that she could really call ill until about nine weeks before she was admitted into the hospital. She had gone to see a relation in Cork, and there she had become seriously ill. On her return to Dublin, six weeks since, she was seized with vomiting, so that her stomach retained nothing; everything she swallowed was immediately rejected. Her bowels were most obstinately constipated. She sought relief from a dispensary in the neighbourhood of the hospital, but as nothing she got afforded any relief either to the sickness of stomach or constipation of the bowels, she applied to be admitted into Sir Patrick Dun's Hospital, and was received into it on the 19th of December, 1862, under Dr. Banks' care. On her admission she was in a state of extreme exhaustion, resembling one in the collapse stage of cholera. She was reported to have had constant vomiting for a month, and to have had no discharge from the bowels during all that time. Dr. Banks tried every possible means of relieving the irritability of the stomach and the constipated state of the bowels, without any effect. Neither medicine nor food was retained by the stomach. Medicine, administered both by the mouth and by injection, and the long tube, were employed in order to produce a motion of the bowels. After being a few days under Dr. Banks' care, she became Dr. Law's patient, exhibiting the same symptoms as she presented when first seen, viz., extreme irritability of stomach and obstinate constipation of bowels. He first tried to ascertain the cause of the urgent symptoms, suspecting that they might possibly depend upon a hernia, but he could find no appearance of it. He experienced great difficulty in examining the abdomen by pressure, in consequence of the rigidly contracted state of the muscles; the patient only appeared to suffer some pain when the epigastrium was pressed. There were no means Dr. Law could think of, to allay the irritability of the stomach, that he did not try, whether in the shape of medicine or of food, but without almost any effect. The bowels

with equal obstinacy resisted aperient medicine. There was but a single fecal evacuation produced by enema during the whole time of her three weeks' sojourn in the hospital. Dr. Law tried to sustain her rapidly-declining strength by enemata of beef tea and brandy, and large poultices of bread and milk on the abdomen. Two days before her death the stomach became settled, and retained egg beat up with sherry wine. The muscles of the abdomen that had hitherto been rigidly contracted now became relaxed, and the abdomen itself tympanitic, but not the least tender on pressure, except in the epigastric region. The countenance indicated extreme anguish. She not only discharged from her stomach everything she swallowed, but also a large quantity of green, bitter fluid. There were no sarcinæ in the fluid vomited. She was reported to have had stercoraceous vomiting before she came under Dr. Law's care, but he had never seen anything like it while she was his patient. On one occasion only the discharge from the stomach was dark, like coffee grounds. She died of extreme exhaustion, from suffering, and innutrition. The specimens exhibited a large amount of disease. All the intestines were coated over with pasty lymph, evidence of recent peritoneal inflammation. In fact, both the parietal and visceral peritoneum were covered with this lymph. The stomach was unusually small; and when opened exhibited a remarkable specimen of fibro-carcinoma, involving the pylorus, and extending almost two inches into the organ. On making a section, it required no small force to divide the scirrhus structure which, even before you approached the pylorus, was, at least, half an inch thick. The pylorus was so contracted that the little finger could not be passed into it. The mucous membrane of the stomach was deeply congested through its entire extent, except in the immediate vicinity of the pylorus; it was evidently in a state of high inflammation. The scirrhus structure did not stop at the stomach; it extended some way into the duodenum, forming a fibrous lamina between the mucous and peritoneal coats of the intestine, and embracing the whole circumference of it. This same structure was extensively developed through both the small and large intestines, and especially through the latter, where the tube became very much contracted. It was, in fact, carcinoma in the annular form. Several glands in the neighbourhood of the portions of intestines where the scirrhus structure was found, were hard and scirrhus in their structure. The omentum was hard and shrivelled up, and formed a transverse band, from which proceeded fibrous threads towards the large intestine; these threads, in some places, almost surrounded the intestine. As these threads in this relation presented themselves to his view at an early stage of his examination, Dr. Law thought that he had in them an explanation of the symptoms exhibited during life, and that it was a case of internal strangulation. But as he proceeded in his examination he found enough to alter his opinion. In the walls of

the uterus there were two tumours, one about the size of a hazel nut, the other about the size of a walnut; the former was decidedly scirrhus, the latter was a fibrous tumour; and Dr. Churchill, to whom Dr. Law submitted it to have his valuable opinion on its nature, thought that it would eventually have become a polypus of the uterus. Both ovaries were converted into small shrivelled scirrhus bodies. Dr. Law considered the pathological specimens and the case altogether to be full of interest. There was in it much both of acute and chronic pathology. Nor was it easy to say how much of the symptoms during life were due to the acute and how much to the chronic lesions. The excessive irritability of the stomach, and obstinate constipation of the bowels suggested the likelihood of strangulated hernia, but it was looked for in vain in its ordinary situations. Nor was there any general tenderness of the abdomen on pressure. Dr. Law next thought that the symptoms probably depended upon malignant disease of the stomach, reflecting that constant symptoms of this disease are both irritability of the organ and constipation of the bowels. He was, however, baffled in his attempt to examine the stomach by pressure, to ascertain the existence of a tumour in the region of the pylorus, by the rigid contraction of the abdominal muscles. Still he saw in this state of the muscles an expression of the acute suffering of the parts within the abdomen, which, at least, was not common in scirrhus of the stomach. Dr. Law looked upon the rigidity of the muscles as the effect of reflex action, a response to the cry of distress from the parts within. Dr. Law spoke advisedly when he asserted that such was not usually the case in instances of cancer of the stomach; for in most cases in his experience the muscles were relaxed, and allowed an unhindered examination. Dr. Law further looked upon the excessive irritability of the stomach as opposed to the view of its dependence on uncomplicated scirrhus pylorus. For although, undoubtedly, vomiting is a very constant symptom of this lesion, yet, in the case under consideration it differed from it in these respects, that nothing produced the slightest effect in relieving it, and the matter swallowed, whether medicine or food, was immediately rejected, which was not commonly the case in scirrhus pylorus. The inflamed condition of almost the entire mucous membrane of the stomach explained the difference. Dr. Law did not ascribe the obstinate constipation of the bowels entirely to the affection of the pylorus. He regarded it in part due to the constriction of the colon produced by the fibrous bands that proceeded from the omentum, and almost acted as so many ligatures on this intestine. Dr. Law adverted to the very unusual circumstance of the scirrhus structure extending to the duodenum, as it most usually confines itself to the stomach. Indeed, the implication of the small intestine in the disease, he remarked, was very rare, while the large intestine was very often affected, especially the rectum. The

appearance of the scirrhus structure in the intestine, and engaging the sub-mucous cellular tissue, so exactly resembled what is seen as the result of common inflammation originating in the mucous membrane, and which, extending to the sub-mucous cellular tissue, converts this tissue into a fibrous structure, that if there had not been the unquestionable scirrhus of the stomach, doubt might have existed as to the exact pathological nature of the lesion in these parts. Dr. Law observed how several pathologists, led by the appearance of this structure so very similar—no matter under what conditions or circumstances of the system originating—regarded it always as no more than the result of common inflammation; while others, from the same cause of similarity of appearance, looked upon it as always of a malignant nature. While Dr. Law believed that truth lay between these extreme opinions, he thought it might reasonably be asked, if what was not originally malignant in its nature, might not ultimately become so under a deteriorated condition of the constitution? The question often had been asked if fibrous tumours of the uterus and ovaries ever underwent such a change; and if such a change might not be apprehended among the eventualities of these tumours, and therefore be a reason for early operation. Dr. Law would offer no opinion on the point, but would notice the remarkable coincidence of the two tumours which were found in the walls of the uterus, one unquestionably scirrhus in its nature, while the other Dr. Churchill pronounced to be a simple fibrous tumour, which, if it had been allowed to fulfil its destinies, would have eventually become a polypus of the uterus. Here were two tumours, different in their natures, in the same organ, in the same individual. Was it a mere accidental meeting of growths strangers to each other, or of growths, although dissimilar when presented to his notice, which would, in the progress of their development, have become more like each other? Dr. Law would content himself with simply raising the question, how far a growth, originally not malignant in its nature, might become so under altered or deteriorated conditions of the general system? or how far a benign growth might continue to maintain its benign character where malignant growths were forming even in the same organ with it? The contrasting varieties exhibited in the various contents of different loculi or chambers in a multilocular ovarian tumour afforded proof how many pathological processes may be going on, not alone in the same body but in the same organ at the same time. One chamber might contain matter malignant in its nature, while the next, only separated from it by a thin partition, might contain what would appear to be nothing more than the ordinary results of inflammation in the most healthy subject.—  
*January 10, 1863*

*Malignant Tumour.*—DR. WHARTON exhibited a *post mortem* section—about one-half of a tumour, which occupied the entire extent, both in

length, breadth, and depth, of the left gluteal region. The weight of the section amounted to 4 lb. 9 oz., so that that of the entire tumour weighed upwards of 9 lbs.

The subject of the disease was a man between 40 and 50 years of age, who had habitually enjoyed good health; his aspect, however, exhibited a strumous tendency. He was in the employment of the Ballast Board, and his habits were strictly temperate.

The tumour originated from an injury received nine years ago, during the shipping of a barrel of salted meat, on which occasion, and by which means, he was thrown upon his coccyx. The immediate effect of the accident was violent pain in this region, attended with syncope, in which state he was carried to the cabin.

After the lapse of some time, a small swelling, about the size of a bantam's egg, presented at the left side of, and close to the anus, on account of which he placed himself under the care of Dr. Beauchamp, with Mr. Cusack occasionally in consultation. The treatment chiefly consisted in the internal and external use of iodine. The tumour, however, continued to increase, and the pain to become more decided. After Mr. Cusack's death, Mr. Hutton was consulted, and subsequently I saw him on one occasion, after which he passed into other hands. The glands in the groin were at this time involved, and the pain was intolerable, being apparently due to the implication of the great sciatic nerve. During the recent Christmas recess, death having brought his sufferings to a close, I received an intimation that I might examine the body, a privilege of which I at once availed myself, as well as of the kind assistance of Mr. Foot, who indeed made the *post mortem* examination. The autopsy, which was conducted in the presence of the brother-in-law of the deceased, was necessarily incomplete, yet so far satisfactory as to enable me, by permission, to remove the portion of the tumour now submitted to your inspection, a matter of some difficulty, by reason of its firm attachments to the skin and subcutaneous tissue by means of tough fibrous bands, which resisted all attempts to sever, except by the knife. The subcutaneous tissue had lost all of its cellular appearance, being converted into a thick, opaque, and grisly substance.

The tumour itself was composed of a dense mass of large and firm granules, resembling fat, and its colour, on section, was pinkish, with the exception of a small portion at the base, which had the character of cartilage. Having requested my colleague, Mr. Collis, to make a microscopical examination of the specimen, he has kindly favoured me with the following report, in connexion with which, it may not be irrelevant to mention, that about four months ago I removed a small melanotic tumour from the brother of the deceased:—

“MY DEAR WHARTON,—I have closely examined the tumour from

the gluteal region to-day. It presents undoubted marks of genuine cancer throughout every portion.

"1.—At the hard part, which you pointed out as the original site of injury, I find, along with much fibrous tissue, an abundance of what are commonly called cancer-cells, of the type generally found in scirrhus.

"2.—In the portion which is of a reddish colour, and in texture somewhat like erectile tissue, the cells are very various in size—the majority are the ordinary lymph-cell, or cell of connective tissue; a comparatively smaller number are cancer-cells, and I find a great many intermediate forms between these two extremes.

"In the large subcutaneous loculi, filled with a soft granular matter, I find plenty of fat and oil, and a quantity of very large cancer-cells, evidently of the acute or encephaloid type, and recently deposited.

"Here and there throughout the tumour there are spiculæ of bone; in the erectile portion there is a quantity of blood and much fibrous tissue, with some yellow elastic fibre.

"To sum up, this was evidently a scirrhus tumour of long standing, the result, as cancer generally is, of an injury. It slowly progressed, until near the end, when a rapid deposition took place in the lax areolar tissue, outside the original seat of the tumour.

"The state of parts in what I call the erectile portion proves to my mind, incontestably, that all these varied forms of morbid cells, however widely they differ in size and outline, have a common parentage—namely, what Virchow calls *the cell of connective tissue*, and what I call by the more familiar name of *the lymph-cell*, for in this part of the tumour we find cells of every variety as to size, from the small and apparently healthy lymph-cell up to the monstrous and unshapely cancer-cell.

"I consider it of no slight importance that this view of cancer, which I look upon as the true view, should be upheld by the Dublin school of pathology; for while it fully recognizes the individuality of cancer and its marked differences from other morbid growths, it does not refuse to recognize the points of analogy which it bears to them, and which it is at least as essential that we should bear in mind, if we ever hope to obtain mastery over this disease.

"As long as we look upon cancer as something parasitical or heterologous, so long shall we despair of curing it. Once we recognize it as a morbid alteration of natural structures we shall perceive that there is at least a possibility that a cure for it may yet be discovered.

"For the present, however, there is no doubt we shall best treat all tumours, even surgically, if we are able not only accurately to diagnose between their varieties, but also to recognize their points of agreement and analogy; certainty of practice will always follow on accuracy of diagnosis and comparison.—January 17, 1863.

"Truly yours, MAURICE H. COLLIS."

*Adipose Tumours.*—MR. HAMILTON, in laying before the meeting an example of this form of tumour, made the following observations:—

I present to the society a specimen of the ordinary fatty tumour, where it occurs superficially—as a contrast to another specimen, more deeply situated. The first or common kind will be seen to be composed of a collection of loose yellow lobules of fat—not kept together by a uniform cyst, but unconnected, except by a coarse cellular tissue, which forms a thin transparent envelope to each lobule. I removed this tumour from the shoulder of a young woman of healthy appearance. It was soft, lobulated, and, when pressed on the upper surface, showing an undulating or lobulated margin; the integument healthy, and not adherent to the tumour; not painful. Now, there could be no doubt from these characteristics, that the tumour was a fatty one; and the diagnosis of this kind of tumour, when superficially seated, as we find them about the shoulders, back, buttock, or thigh, is very easy; when the fatty tumour is seated under a thin muscular expansion, as the platysma, or the trapezius, or under a fibrous fascia or tendinous expansion, as under the occipito-frontalis, or tensor vaginae femoris, the diagnosis is often difficult. You then have a soft elastic tumour, in which the lobulated character does not exist. The diagnosis of this other specimen of fatty tumour presented this difficulty.

A lady consulted me for a tumour, occupying the left side of the face, and which caused considerable deformity. It filled the whole parotid region, from over the zygomatic process above, and the side of the jaw below, and extended behind the ascending ramus of the jaw, so as to push the ear upwards and forwards. It was prominent and large, putting the integuments on the stretch, giving them a tense shining surface; it dragged slightly back the outer angle of the left eye, and more decidedly the left side of the mouth, giving a peculiar and disagreeable expression. Though it was prominent in the centre, the margin was diffused; its contour smooth, without any appearance of lobules; the integument healthy and movable over its surface. Its consistence was firm, with an elastic, pseudo-fluctuating feel. It was little movable from side to side, but still enough so to lead to the conclusion that the base was not adherent to the subjacent parts altogether, and not amalgamated with them. I considered that the little amount of lateral motion, as also the diffused margin of the tumour were of the same origin—viz., its position under the strong fibrous fascia which covers the parotid. I considered it to be most likely one of those pale, grey, elastic tumours, met with in this situation, and at the side of the neck—a fit case for removal, as it presented no character of malignancy, and the lady was perfectly healthy. It was of 20 years growth, and had commenced with a little swelling anterior to the articulation of the jaw, slipping in and out at first with the motions of the jaw. Assisted by Mr. Smyly, I removed the tumour

while the patient was under the influence of chloroform. I had turned carefully in my mind the best method of removing it effectually, and with as little deformity as possible; and at first I was inclined to use only one long perpendicular incision, rather near to the ear; and should I, in the course of the operation, require more room, join another to this, a little below the line of the side of the jaw, so as to be able to turn up a flap, if necessary. But thinking it possible that it might be adherent at some points beneath, and that if I had not sufficient room I might, in dividing these deep-seated adhesions cut across the seventh nerve, and thus give rise to the disfigurement of facial paralysis, I determined to give myself room. I, therefore, made a perpendicular incision from the zygomatic process to the lower line of the jaw, about two fingers' breadth before the ear, and a transverse cut to this, making the incisions crucial, in a line from the lower part of the ear to midway in the cheek. They were carried down to the tumour itself. By dissecting down to its surface, and dividing an adherent band here and there, and tearing it up from its bed by the fingers and the handle of the scalpel, it was removed entire; but not without considerable difficulty, as it was adherent to the bones at two points—to the zygoma above, and to the ramus of the jaw below—the osseous tissue in these situations being rough and deprived of periosteum, absorbed, no doubt, by the pressure of the tumour. As had been surmised, it was situated under the strong fibrous capsule of the parotid gland, which was flattened and diminished by the superincumbent pressure. When removed, the tumour proved to be a fatty tumour, but of firm consistence, oval in shape, about the size of a lemon, and smooth on the surface. There was a separate flat mass of fat under it, between it and the parotid, which I removed, as well as a small detached tumour, the size of a chestnut, more white and firm than the larger tumour. There was no trouble from hemorrhage, and she recovered without a bad symptom.—*February 28, 1863.*

*Cancer of the Stomach.*—DR. HAYDEN exhibited a morbid specimen, taken from the body of a female 34 years of age, who was admitted into the Mater Misericordiæ Hospital on the 3rd of February, and died on the morning of the 15th. The history she gave of her case was, shortly, as follows:—She was the wife of a poor farm labourer, living in Wicklow, and the mother of six children, each of whom she suckled at the breast for two years and a half. Her habits were most industrious and laborious. She had been accustomed to carry heavy weights for the surrounding population, over a mountainous part of the country. About 18 months ago—the time nearly coincided with that at which she ceased suckling her last child—she suffered, for the first time, from acidity of the stomach, flatulence, and occasional vomiting. The latter occurred after taking a heavy meal, and she scarcely experienced any pain at that

time. In the process of time the acidity of the stomach and eructations became less troublesome, but in the same proportion the vomiting increased in frequency. A month before her admission she was quite incapable of retaining any alimentary substance in the stomach, except fluids, and these only for a few minutes. Her appearance was that of extreme emaciation—her face and entire body were wasted to a degree. Her face presented a curious tint of colour, which might be described as an admixture of the anemic with the jaundice tint; her lips and tongue were white. Her pulse was extremely feeble and quick. The left lower extremity, from the hip downwards to the toes, was œdematous, and the seat of excessive pain. In fact, at the time of her admission into the hospital, she complained principally of the pain in the lower extremity. Her bowels were habitually constipated. On turning down the bedclothes, it was quite obvious, from the appearance of the epigastrium, that it was the seat of the disease. On placing his hand on the epigastrium, he felt a hard irregular tumour, which obviously engaged the stomach, and to a slight extent the left lobe of the liver. The lower extremity was tense, especially that portion near the popliteal space, and so sensitive that she could scarcely bear the finger to touch it. It was unnecessary to detail the progress of the case beyond stating that during the period of her residence in hospital she was totally incapable of retaining any kind of nutriment; even water only remained for a few minutes on the stomach. On examining the body after death, the entire of the pyloric extremity of the stomach was found infiltrated with carcinomatous substance. In the neighbourhood of the pylorus a deep ulcer was formed, the fundus of which consisted of the transverse muscular layer of the stomach; another ulcer, less deep, existed near the former. The entire of the lining membrane of the pyloric extremity was deeply congested. The pancreas was rigid and closely adherent to the posterior surface of the stomach. The lesser curvature of the latter organ was firmly attached to the free edge of the left lobe of the liver, and the adventitious bond of union between the two organs was the seat of carcinomatous deposit, which extended to that part of the liver immediately adjoining. On examining a section of the left lobe of the liver he found cancerous deposit extensively disseminated through it; and the lumbar glands were also similarly diseased, some of them containing a fluid extremely like milk, which furnished a good example of “cancer-juice,” and, examined microscopically, presented nucleated cells, varying in size from one-thousandth to one-eight-hundredth part of an inch, and spheroidal or ovoid in figure. The points of interest in the case are the almost total absence of pain referred to the stomach, and the complication of acute œdema of the left lower extremity, unaccompanied by inflammation of the lymphatics, or veins of the limb.—*February 28, 1863.*

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.<sup>a</sup>  
TWENTY-FIFTH ANNUAL SESSION, 1862-63.

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DR. BEATTY, President.

Dr. KIDD exhibited a pessary that had remained in the vagina for 13 years. The patient, about 70 years of age, applied to Dr. Kidd, at the Coombe Hospital, on the 9th January. She stated that he had himself introduced the pessary for her, 13 years ago, and that, notwithstanding the directions she had got to apply at the hospital occasionally to have it taken out and cleaned, she had found so much comfort from its use that she had not done so, and had almost forgotten its presence, till, about a fortnight ago, when she began to suffer from pains in her back, and from vaginal discharge.

On examination it was found that the string of the pessary had disappeared, and that the instrument itself had become coated over with a calcareous crust. The vagina was hot and tender, and there was a very offensive discharge. All attempts to grasp the pessary with the fingers failed, and Dr. Kidd introduced one blade of Churchill's midwifery forceps, and, by carrying it above the pessary, and placing two fingers of the left hand opposite to it, so as to steady the pessary and keep it from rolling off the instrument, succeeded in extracting it.

The pessary proved to be one of those so-called caoutchouc ones, which are really formed of a mass of tow covered with some black composition. The composition had all been dissolved away by the secretions of the vagina, which had become ammoniacal, and the whole mass was saturated with highly offensive fluids, so that one could not but be surprised at its remaining so long in the vagina without producing a great amount of both local and constitutional irritation.

Dr. Kidd mentioned having, on a previous occasion, removed a large globular boxwood pessary that had lain in the vagina for upwards of 20 years.

In this case it was necessary to introduce both blades of the forceps—and Dr. Churchill's forceps was preferred for the purpose—as the points of it approximate so much more than those of other patterns.—*10th Jan., 1863.*

The Secretary, DR. KIDD, read the following communication from PROFESSOR MURPHY, of University College, London, Hon. President:—

*Spontaneous Evolution.*—On the 4th of November, 1862, Dr. Scholfield

<sup>a</sup> These reports are supplied by Dr. Geo. H. Kidd, Secretary to the Society.

Johnson, of Stoke-upon-Trent, was called on to attend a lady in her first confinement. He arrived shortly before 10 o'clock, a.m.; the pains were then good, and had been so previous to his arrival. After a very careful vaginal examination Dr. J. found the os uteri dilated somewhat larger than a crown piece, and moderately dilatable: membranes entire.

"Dr. J. diagnosed a head presentation; and, from the position of the posterior fontanelle and sagittal suture, was satisfied that it occupied the third position. No examination was again made until the liquor amnii escaped, the os being three parts dilated; and then, to Dr. J.'s astonishment, he felt the breech; the funis also descended, and gave some trouble; as the pulsations were becoming feeble, Dr. J. delivered his patient at 11 40, a.m. The child was nearly still-born, but was restored with some difficulty.

"*The child had a swelling on the upper part of the left parietal bone, extending towards the occipital; it increased in size during the next 24 hours, and was larger than a pigeon's egg, and evidently contained blood. The ankle also was discoloured, and slightly swollen.*"

Is this a case of spontaneous evolution, according to Denman's explanation?

Dr. S. Johnson, a skilful practitioner, felt the fontanelle and sutures, so as to diagnose the position of the vertex, and made no subsequent examination until the membranes were ruptured, when he found the breech presenting. After delivery a tumour was found on the upper part of the left parietal bone, just where it ought to be in third positions.

*Placenta Previa; Detachment of the Placenta Before the Birth of the Child; Arrest of the Hemorrhage; Child Born Alive.*—I was sent for by Dr. Bryant to see a lady in labour, who had several severe gushes of blood with her pains. Suspecting the cause, Dr. B. wished for assistance.

I found her weak from the loss of blood, but the pulse still to be felt quick, but not jerking. The os uteri was dilated to the size of a crown piece, with the placenta over it; it was quite dilatable, so that, as the cause of the hemorrhage was manifest, and there was no reason for delay, we determined that she should be immediately delivered.

In proceeding with the operation I passed the closed fingers easily within the os uteri, and gradually insinuated them between the uterus and placenta. I swept them round, completely detaching the placenta from the uterus, and then proceeded to turn. *The hemorrhage at once ceased.*

I was occupied from 10 to 15 minutes in the operation; and when the child was born it did not at first respire, although the heart was acting; with very little assistance, however, the respiration was gradually established, and the child saved.

Both lady and child are now progressing most favourably.

In this case the placenta was separated from 10 to 15 minutes before the child was delivered, yet the action of the heart continued.—10th Jan., 1863.

The PRESIDENT read the notes of a case in which *a large Calculus was expelled from the Female Bladder, by the natural efforts, through the Urethra.*

Eliza Simcock, aged 40, unmarried, by occupation a milliner, was always healthy until about a year ago, when she first complained of irritability of the bladder, and scalding in the passage of urine. At the end of a year she came up to Dublin from Waterford, where she resided; and, before seeking medical advice, she was persuaded, by some of her friends with whom she was staying, to take a dose of turpentine, which greatly increased the scalding, and produced hemorrhage from the bladder. She was now seen by Mr. Haffield, who shortly afterwards asked me to take her into the City of Dublin Hospital. She was admitted on the 28th of September, 1861.

She was at that time a most miserable object. She was attenuated to the last degree, her pulse fast and feeble, her sufferings constant. Night and day she had the bed pan under her in the bed, an incessant incontinence of urine mixed with blood and pus, of a very abominable fetor, rendering it necessary; and every drop that passed caused intense agony. The vulva was highly inflamed, and pus flowed freely from the vagina. A quantity of sabulous matter, deposited from the urine, covered the orifice of the urethra and the labia, extending into the vagina. A warm hip bath, and a draught with 30 drops of laudanum were ordered. These gave some slight relief, but no sleep.

Sept. 29th.—Still suffering too much to permit of any exploration of the bladder. Camphor, hyoseyamus, and potash ordered; and the hip bath to be continued, with the anodyne at night.

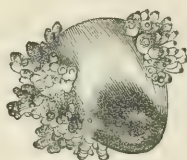
Oct. 5th.—Some alleviation of her sufferings having been obtained, I passed a catheter into the urethra, but not into the bladder, for it was obstructed at the neck of the bladder by a solid body that occupied the canal. Being satisfied that there was a calculus in the bladder, I came the next day, October 6th, determined to attempt its removal, when I found that, in the course of the night, after great pain and straining, and a dragging tearing sensation in the urethra, she was suddenly relieved by something passing away, followed by a large discharge of urine, pus, and blood. The body which had been expelled was one and a half inch long, and one inch broad, and weighed two drachms. It was rather soft and pultaceous on the surface, and was laid aside for further examination.

The bladder was now well washed out with warm water, injected through a gum-elastic catheter, and 10 drops of dilute nitric acid in an ounce of water was ordered every six hours. The warm bath and anodyne draught to be given at night.

Oct. 7th.—The patient passed a tolerable night, and had the first sleep she had enjoyed for many weeks. The irritability of the bladder is much diminished, but the incontinence of urine still remains. The bladder was again injected with half a pint of warm water, which was retained without much pain, and then withdrawn. The bath and anodyne at night.

From this date she continued to improve steadily. The power of retaining the urine was gradually restored. The bladder was washed out every day, and the quantity of water thrown in was daily increased, and borne well. She was finally discharged, without any incontinence of urine, on the 20th of October.

On examining the calculus which had been expelled, it was found that the soft pultaceous matter that formed the outer coating was easily peeled off, leaving a calculus of the very peculiar form delineated in the accompanying wood-cut. It looked like a common pebble, from whose



surface stood out all round a vast number of stoney processes, forming an incrustation like stalactites. My first impression was that this was a foreign body that had been introduced into the bladder through the urethra, and had formed the nucleus around which these curiously shaped deposits had been formed; but it was not so. My friend, Dr. John Barker, kindly examined the specimen for me, and I give his analysis as he furnished it to me:—"The body of the calculus is composed chiefly of oxalate of lime with some lithic acid. The stalactites on the calculus are nearly pure oxalate of lime. The envelope and crusts are formed of earthy phosphates; in the former is a quantity of animal matter."

A glance at the fearfully jagged surface of this calculus is sufficient to explain the torture the woman must have suffered during its sojourn in her bladder; and in the soft coating in which it was encased, we have a striking example of the means by which nature often endeavours to alleviate or remedy disease. If it had not been that this putty-like material was thrown round this calculus, and thus a smooth surface given to what had been so rugged, it is impossible it could ever have escaped through the urethra by the natural efforts.

We now know of six modes by which calculi can be removed from the female bladder. Of these, two are natural efforts, and four artificial. Of the two natural, that, of which the present case is an instance, is the

most common when the stone is of small size; and instances are by no means rare in which this occurs. But it is not often we meet with cases like the present, and that one described at our last meeting by Dr. Byrne, in which stones of such large dimensions escape through the urethra. The rapidity with which the urethra resumed its healthy condition, and the perfect control regained over the sphincter, is of great importance in a practical point of view, for it shows the great extent to which forcible dilatation of the urethra may be carried with impunity.

The second natural effort by which stones escape from the bladder is by ulceration through the coats of that viscus into the cavity of the vagina. Sir Benjamin Brodie gives a notice of such cases in his work on urinary diseases. I lately saw a case with Dr. Bannon, in which a very large stone made its way out in this manner; but as he intends to bring forward the case at a future meeting of the society, I will not further allude to it at present. The four artificial methods are—dilatation, incision of the urethra, incision into the bladder, and lithotrity. I have already alluded to the extent to which the urethra may be safely dilated; by safely, I mean without leaving incontinence of urine behind it. Whenever the stone is of moderate size, this method should be adopted. The prepared sponge tents—such as are described by Dr. Simpson, and used for the dilatation of the cervix uteri—will be found very useful when employed for 10 or 12 hours before the operation. Incision of the urethra, either along its upper or lower surface, has had many supporters. It is imagined that the texture of the canal is less injured by, and yields more readily to, the force used in extraction, and that the wound in the tissues will heal more quickly than the tone of the canal can be recovered, and thus a security against an incontinence of urine is provided. In cases where the stone is very large, and the operation through the urethra is preferred, this mode of proceeding may be used with advantage. The third artificial method is that of cutting directly into the bladder, through the anterior wall of the vagina. From the ease and certainty with which large openings into the bladder are cured every day, I think no one need be afraid to perform the operation in question, when a stone is of too large dimensions to pass by the urethra. The operation is readily performed; and, by the wire sutures, the wound will be at once healed, and no chance of incontinence of urine—which sometimes follows operations through the urethra—will occur. It is obvious that this operation is more applicable in cases of women who have borne children than in virgins. In the latter, the narrowness of the vagina and the presence of the hymen must render the operation more difficult than when the vagina is wide and dilatable, and a good view can be got of the parts to be incised. Of the fourth method or lithotrity, I would observe, that although at first one would be inclined to think it the best and safest mode of proceeding, it has been found to offer great difficulties,

the chief of which arises from the ease with which the urine escapes from the bladder along the sides of the instrument; and when this occurs, there is always danger of injuring the inner coat of the bladder by the blades of the lithotrite. If this can be avoided, and the bladder kept full of water, the operation is one that offers great advantages.

DR. QUINLAN read the following case of *Lithotrity in a Female* :—

E. K., a rather delicate girl, aged 17, was sent to me by Dr. Ryan, of Francis-street, under the following circumstances :—She had been visited by him as a dispensary patient, and found to be suffering from great pain, referable to the region of the bladder, and to have a constant desire to pass water. Upon attempting to do so she used to pass a very small quantity, usually containing a copious deposit. Considerable pain generally followed micturition; this used to be relieved, however, by the patient lying upon her back. Dr. Ryan suspected the existence of a stone in the bladder; and, upon sounding, at once ascertained that such was the fact. She was accordingly sent to St. Vincent's Hospital for treatment, upon Dec. 12, 1860.

Upon admission the patient was found to suffer from the vesical complications described above, and from some feverishness. The urine was a light colour, of ordinary specific gravity, was highly alkaline, and slightly albuminous. The deposit already alluded to, when placed under the microscope, was found to consist of pus, mucus, and crystals of triple phosphate. The stone, which was single, appeared to be of an ovoid shape, and gave, through the sound, the soft feeling of phosphate. Its size, as nearly as could be ascertained, was, long diameter, something less than two inches; short diameter, somewhat more than an inch; the thickness about three-quarters of an inch. She was recommended flaxseed tea, with hyoscyamus, rest in the recumbent posture, local fomentations of poppy heads, and other suitable measures for the diminution of local irritation. At the same time means were adopted to improve her general health and strength.

Upon the 21st instant, her condition having been very much alleviated, an attempt was made to remove the calculus by dilatation, the mucous membrane having been previously nicked in an upward direction. After, however, dilating for about an inch, I found that, from the extreme rigidity and irritability of the urethra, it would be impossible to continue the dilatation to a degree sufficient for the removal of the calculus in an unbroken state without great risk of laceration. I thought it better, therefore, to wait until local irritation could be even further diminished, and additional measures taken. The case was now seen by Dr. O'Ferrall, who advised me to continue the demulcent treatment previously adopted, with the addition of the occasional application of leeches to the urethra, and of washing out the bladder with warm water, containing a

little laudanum, by means of Brodie's double-channelled catheter. He further expressed his opinion that the best course to pursue, under the circumstances of the case, would be first to break up the calculus with a lithotrite, and then to remove the fragments by a slight and safe dilatation such as the patient could bear. Accordingly, the irritation having been gradually diminished, so that the patient now suffered very little while at rest, and her health having become greatly re-established, a second and successful attempt was made to remove the calculus upon the 13th of March, and the following days.

The patient having been placed in the lithotomy position, with the pelvis well elevated; four or five ounces of warm water having been injected, Lestrangé's lithotrite was introduced, and the calculus, which was easily grasped, was broken four or five times. As soon as the crushing process was commenced the injected water began to escape along the lithotrite. This was, however, arrested, upon the suggestion of Dr. O'Ferrall, by surrounding the instrument with a collar of sponge kept closely pressed against the meatus. Upon the day but one afterwards the calculus was still further broken up.

Upon the next day, March 16, the concluding portion of the operation was conducted as follows:—The patient having been placed under the influence of chloroform, the urethra was nicked in the same direction as before with Crampton's sheathed bistoury, and the urethra was dilated by Weiss' two-bladed instrument, so as to admit the fore-finger, and the fragments, including an ovoid nucleus of lithic acid, were, with the assistance of Dr. O'Ferrall, extracted, partly by the forceps and partly by the finger; and the bladder having been at last found to be quite free from debris, was washed thoroughly out with warm water. The patient was removed to bed, a warm anodyne was administered, and stupes were applied. Not to dwell too much upon details, I may briefly state that the subsequent progress of the case was most favourable. Incontinence of urine continued for about three days; gradually, however, she obtained more command over the bladder, and at last was able to retain water for an hour and a half. Her general health improved from day to day; and when she was discharged from the hospital, upon the 25th of March, the urine had become quite normal. She was recommended to go to the country for change of air, which she accordingly did. She visited the hospital from time to time, and when I last saw her she was strong and in perfect health. She was able to retain the urine for three or four hours during the day, and at night during the entire period of sleep.—*10th January, 1863.*

Dr. CHURCHILL reported to the society, that since his last communication to the society he had made further trials with Hodge's pessary, in

vaginal rectocele; and by adapting the size of the instrument carefully, he had succeeded in preventing the protrusion.

For the support of vaginal cystocele, a slight addition to the instrument is necessary, because the protruding part will escape between the two horizontal bars of the instrument. This is easily prevented by adding two or three cross bars, which effectually support the bladder. Great care should be taken to choose a pessary which will fit exactly.—14th February, 1863.

## TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.<sup>a</sup>

SESSION 1862-63.

NOVEMBER 12th, 1862.

DR. W. C. TOWNSEND, President.

*Report on Scarlatina.* By DR. CREMEN.

In compliance with the wish of the society, expressed at the meeting of the 12th inst., that some information should be collected and laid before it respecting the epidemic of scarlatina which has pervaded this city for the last few months, I have the honour of laying the result of my experience of the disease, as it has occurred in my own dispensary practice, and also the information which has been afforded me by others. The limited space of time for performing this task has, I regret to state, prevented me from furnishing a report as ample and replete with facts and statistics as the subject merits, or as I could wish myself, and, consequently, I fear that it will be found very deficient; indeed, the society is aware, that as far as the element of mortality goes, it is impossible to have true records, as we want in Ireland a public registration of deaths and diseases, such as is to be found in London. However, I think, I am enabled to state, from what I have observed myself, and from inquiries which I have made from parties who are in a position to form a correct opinion on the subject, that the mortality of this epidemic has been very much exaggerated, and may be considered at a minimum rate in proportion to the population; and also that rumours and other causes have created much unnecessary alarm and anxiety. In this respect it must also be remembered that those districts where, as in the north and flat of the city, the population is the largest and poorest, are always found to

\* These Reports are supplied by Dr. T. W. Belcher, Secretary to the Society.

suffer most when any temporary visitation of dearth or disease is present. In the histories of the epidemic diseases which are to be found in the annals of medical literature, we find that scarlatina occupies a prominent part; epidemics of it in London have been reported by Sydenham, Huxham, Fothergill, and others; in Dublin, by Drs. Graves and Kennedy. The former refers, in his valuable work on clinical medicine, which has been so deservedly praised by Trousseau, to the disease in 1801-2-3-4, and gives a special report of the epidemic scarlatina, which raged with fearful mortality not only in Dublin but simultaneously in other parts of Ireland. Trousseau, in his late work on clinical medicine, in speaking of the treatment of fever by food and stimulants, compliments the Irish physicians, and alludes in the highest terms of eulogy to Dr. Graves; "allow me gentlemen," he says, "to strengthen my own authority by an appeal to that of the man whom I consider the greatest clinical physician of our age, I mean Graves, whom I delight to quote, whom I so frequently consult, and who ought to be your *vade mecum*."

On referring to the interesting paper by my much esteemed friend, Dr. Popham, published in the *Dublin Quarterly Journal* for 1853, on the Climate and Diseases of Cork, the facts of which seem to have been collected with much care and accuracy, and which, from his extensive opportunities, may be looked on as an authentic record on the subject, I do not find scarlatina spoken of up to that period as occurring either endemically or epidemically, so few at all times were the cases, and so trivial, as not to demand particular attention.

Scarlatina, however, is observed to visit Cork annually, either in spring or autumn, with a mild and constant character, its epidemic constitution being stationary, to use the expression of Sydenham; the first appearance of it recorded as assuming in some degree an epidemic form, with any measure of severity, took place in the winter of 1856 and '57, a brief account of which is to be found in the report of the transactions of this society for those years.

I shall first speak of this disease as it occurred under my own observation in my dispensary district, including cases that I saw with others. In order to obtain medical information from the other dispensary physicians, I wrote a circular soliciting replies on the following points:—1st. Date of its commencing. 2nd. The number of cases. 3rd. Prominent symptoms. 4th. If it seemed to traverse in any direction. 5th. If any cases in the puerperal state presented. I find, on referring to my dispensary register, the date of the first case of scarlatina to be 28th July, 1862; the total number 161; and 35 cases of pure cynanche without eruption, but of a scarlatina character: 12 cases out of the 161 were fatal; of these two died of convulsions—one in 48 hours, the other on 6th day; two died of scarlatina poisoning combined with true typhus; in one of these wine and stimuli ordered by me were countermanded by

an old woman; two died asphyxiated from the most severe pulmonary engorgement and its result; the remaining six died exhausted at various periods from the 6th to the 21st day; two cases died which did not obtain any medical treatment as far as I could learn, one, a fine boy eight years old, whom I saw in *articulo mortis*, from intense pulmonary congestion and cerebral effusion, being ill, or at least complaining, only 48 hours; the second died of asthenic syncope, or failure of the heart's power; his mother told me he had a slight rash out on his skin 14 days before; he swallowed well, had no sore throat, was even running about the street the day before his death, but in a very feeble and languid state. My attention was early attracted to the probable severity which the disease might be found to assume, on hearing of the death of two fine children, within 12 hours of each other, belonging to a butcher living at Sive's-lane, the first of whom was complaining for a week, and was supposed to be suffering from worms; the house was at the opposite side of the lane where I was called to visit a child whom I found had scarlatina; from this date I observed the disease to spread and extend itself, presenting various degrees of severity, and to traverse the district which lies in one of the most elevated, and, I would say, salubrious parts of the city, including Fair-lane, Old Market-place, Cattle Market, Boyer's-street, Bally MacThomas, and the lanes off the right hand side ascending Blarney-lane, in a direction from north-east to west. Early in the disease, about the middle of September, while coming daily into close proximity with some children whose throats were so very bad as nearly to resemble the malignant form of the disease, and required brushing over with various applications, most of them containing chlorine, having been quite well in health at my dispensary on 20th September, I was seized, on the morning of the 21st, with intense and violent headache in the frontal region, chills all over my body almost amounting to rigor, and very severe sore throat; towards the end of the week my tonsils became ulcerated, but no eruption appeared on the skin; after more or less suffering for 10 days, relief was obtained from the most painful difficulty in swallowing, an abscess having formed and burst at the side of the right tonsil. I was compelled to keep the house for a fortnight. This attack I attributed solely to infection, because at the time, or previously, I was not exposed to cold, wet, or night air; when I returned to duty, after a fortnight's absence, I observed the disease more closely, and with much interest, as it began to extend itself all over the district in the direction already stated, and then to appear in the flat of the city with much severity and increased numbers and mortality; also in the south and east, extending itself to Passage, where it was severe, and the cases were very numerous. I have been informed that after a lightness in the amount of the disease in the north-east, where it may be said to have first appeared, that it has returned and increased in numbers and severity

in the neighbourhood of Dublin-hill, Spring-lane, and Blackpool Commons-road, where fever, ague, the measles that visited Cork in the spring of this year, and the scarlatina of 1856 and '57 were observed to be most prevalent, while with me, at this date, one case daily has been the number; I took an opportunity of calling to make inquiries at all the lanes at the western side of the north main-street, and Paul-street, where the disease was said to be most fatal, including Coleman's-lane and Austin's-lane, where public rumour had placed a great number of children lying dead at the same time. I learned, however, that there occurred only three deaths in Coleman's-lane, two in Austin's-lane, one case in Fishamble-lane, five in Paul-street, one in Brown-street, one case in the vicinity of the Custom House. From my own observation the disease presented itself in four different forms or types, and these closely resembled the character of the disease in 1834 and '35, reported by Dr. Graves.

1st. Cases beginning with the ordinary exanthematous pyrexia, succeeded in a period of time, as yet undefined by medical observers, by an efflorescence, more or less extensive, over the surface of the body, and with various degrees of depth of colour or floridness, from the light tinge of roseola to the extreme degree which has been well compared in appearance to a boiled lobster, followed, in some instances, by a tardy and, under favourable circumstances, by a rapid convalescence; in short the ordinary scarlatina that is to be found described in the standard works, such as West, Watson, Copeland, Tweedie, and Burrowes, and more recent authorities, Gairdner, and Trousseau.

2nd. Cases ushered in with high fever and great vascular excitement, followed by cerebral disturbance, often amounting to delirium and convulsions; in these bronchitis and pulmonary engorgement, vascularity of the throat and ulceration of the tonsils, and tumefaction in various degrees of the sub-maxillary and parotid regions were the prominent conditions; this was a favourable form, and yielded to treatment; in some the convalescence was protracted.

3rd. Cases which commenced with bilious vomiting and purging, the gastric form of Graves, the fever accompanying being of a typhoid type; in two cases the fever was true typhus, the eruption coming out slowly, the glands in regions of the sub-maxillary and parotid spaces being in most cases enormously swollen, puffy, and œdematous under the finger, the "scarlatina-bubo" of Trousseau, with purulent discharges from the ears and nostrils; in some cases of this class, large gangrenous abscesses took place in the external fauces, exposing the parts underneath like a dissection. This last state of things I saw to occur in four cases, two of which were fatal; one of them died of hemorrhage from the jugular vein; in the second, before the slough was detached, the left elbow joint became inflamed, and the patient, a child of three years, died of asthenic

syncope, in the mother's arms. An extreme case of this kind is related where the pharynx was perforated, and the food passed through. This was the most grave form.

4th. Cases of severe cynanche, where the fever was high, the eruption so light and trivial, if it ever took place, as to escape notice. This form presented itself mostly in adult persons, terminated favourably, and was not followed by anasarca. Children, on the contrary, often presented with anasarca, where advice was sought for sore throat only, or swelling of the external fauces in various degrees, the dropsical condition not being observed by the mothers.

The disease has been so well described by different writers I have mentioned, as to leave nothing for me to say; but Dr. Graves seems to me, before all, to have observed most closely, and to have written most accurately. As regards the connexion of scarlatina, and of albuminous urine, it does not seem to me to be determined by any fixed law. I should say about three-fourths of my cases had this condition of the urine, more or less excessive in amount, which disappeared, without any permanent effect, as the patient became restored to health. One specimen of urine, which was secreted scantily, resembled in appearance a muddy mixture of raspberry vinegar and water. My friend, Dr. Townsend, jun., very kindly examined it with the microscope, and the appearance presented was a mass of granules, broken down blood corpuscles, and disintegrated epithelium; no fibrinous coats. The urine in other cases varied; one extreme case resembled muddy beer.

Graves, I think, is right in considering the albuminous condition of the urine in this disease to be the result of deranged function, which, in most cases, leaves after it no permanent defect in the structure of the kidneys, and by no means an inflammation, no more than is the engorgement of the spleen in ague. Nor is it of an organic nature in any degree, albumen being found in the urine in variola and other diseases. With respect to the relation between desquamation and the occurrence of dropsy, the latter does not necessarily follow. In two cases of the present scarlatina, where the desquamation was extensive, almost general, anasarca did not follow; the urine, however, was scantier and higher in colour than natural. In many of the cases the convalescence was extremely protracted, and the recovery from the dropsy tedious, in consequence of want of nutritious diet and warm clothing, and the exposure to all the disadvantageous circumstances to which the children of the poor are liable, as well as the negligence and irregularity with which medical directions are carried out in dispensary practice, though these children may have all that may be necessary if sent to one of the local hospitals. The parents were at all times averse to this latter.

With regard to the treatment pursued with my cases, it consisted for the first day—the bowels being attended to—of diaphoretic medicines;

afterwards the administration of a combination of sesqui-carbonate of ammonia and chlorate of potash, which, as far as I could judge, acted beneficially both as a stimulant and as an antiseptic. The local treatment consisted in applications of various chlorine solutions—the solid nitrate of silver for bad ulcers; solutions of the latter in milder cases. The use of muriated tincture of iron mixed with honey, in two proportions; first, one part of the tincture to two of honey; and second, one of the tincture to four of the honey; also with glycerine in equal parts.

The application to the external fauces consisted in chamomile fomentations, and the use of the various liniments; hot bran poultices in some cases where the ulcerated throat was of a bad form. I found the inunction of dilute mercurial ointment of service. In one case, a fine boy of three years, a patient in Dr. Curtis' district, we applied leeches to the external fauces with decided advantage for the time. The child died afterwards from the results of re-infection: the debility of most of the children prohibited the abstraction of blood. One case, a boy aged seven, named Finegin, and residing in Horsewell-lane, was seized, on the 16th day of his convalescence, with the most violent convulsions, which nothing controlled. I bled him from the arm to 10 ounces. He recovered however, and I attributed the convulsions to uremia. Gairdner, the latest writer on scarlatina, quoting the aphorism of Heberden, says that there is no disease where the patient is more apt to be delirious and with less danger; that it is more fatal to well-fed children than to those not so; also, that the reverse happens in typhus. With respect to treatment, he says, neither stimulate, deplete, nor purge, nor put in force any active or perturbative treatment. I must say I differ widely from this professor. As far as the experience of the present scarlatina goes, all the cases required to be sustained, some with wine from the outset; in one case brandy, in small quantities in dilution, was given.

Trousseau confirms by his authority the fact that, in certain epidemics of scarlatina, the virulence of the disease appears to be concentrated in particular limited localities, and that certain families particularly suffer; he refers to the case of the present Bishop of London, who, in the space of one week, lost six or seven children.

The contagious principle of the disease in Cork did not appear subservient to any rule; for instance, one child in a family got the disease, the other children escaped, though in the house and about the sick child. In other cases, one child being attacked, the rest caught it, and all went through favourably—as in a house at the top of Bally Mac Thomas, I had five children lying down together in the same family. All recovered, with dropsy however. In other instances the poisonous principle seemed to multiply and increase itself in its intensity. Of this we had some very painful examples; for instance, one family in Maylor-

street, one in Blarney-lane, one in Great Britain-street, lost three children each. A family on Fair Hill, one at Boyce's-street, one in Paul-street, lost two children each. These were all the cases that I could hear of the kind in the city; the rest were single deaths and scattered. Last week I made inquiry of the Superior of the South Monastery as to the prevalence of the disease in the south parts of the city, and learned from him that none of the children were absent or dead, out of a daily roll of nearly 300 boys. This is, I think, a good test. Much popular error arose, I think, from the number of funerals going to the Botanic Gardens on Sunday; but we know that all funerals are, if possible, held over till Sunday, and every one was supposed to be a death from scarlatina, and the weather for the last month was unusually severe and trying to the ill-fed, ill-clad children of the poor.

In conclusion, I think it may be said that the disease prevailed generally, for the last two months, among the poorer class, especially in the north and flat of the city; that the deaths were few in proportion of the population and the numbers attacked; that no deaths save two took place in the wealthier class, and these of a very distressing nature, both from the virtuous qualities of the individuals, and the short duration of the disease—the first died of asthenia, the second of uremic poison, consequent on the sudden suppression of urine, an unusual symptom; other cases, few in number, have occurred in the same class of life, the character of the disease in them being, as I learn, mild, and not in any way severe. The total number of cases were 1,346, with 125 deaths, which would give a mortality of 10 per cent.

#### *Abstract and Notes of Cases.*

CASE I.—Honora Leavy, aged 30 years—five months advanced in utero gestation—taken ill with severe chills, headache, constriction of the fauces, on Monday, 26th September; was seen by me on the following Wednesday, and found in high fever; intense headache; copious florid eruption over all the body; superficial ulceration of both tonsils; intense vascularity, almost of a livid hue, of the surrounding mucous membrane; extreme tenderness, but slight swelling of the external fauces; having gone to hospital, she recovered. Anasarca did not follow; she stated that, four days previous, she lost a child, aged eight, with scarlatina, who was apparently quite well in health in the morning, was seized during the day with violent purging and vomiting, and sunk exhausted at 12 o'clock same night; two more of this woman's children got scarlatina—one in a mild form, the other severe. This case illustrates two points:—

A. The violent nature and rapid progress of the disease.

B. The extension of the infection of the disease amongst the members of a family, viz., a mother and three children.

CASE II.—William Sullivan, three-and-a-half years, presented at Clarence-street dispensary, 17th November, with general anasarca, which his mother stated had existed for a week; extreme debility; loss of appetite and anorexia; the mother, a careful observant woman, stated the child had not had sore throat or any eruption on the skin previously.

CASE III.—Catharine Hanan, nine years, presented in a pyrexial condition, with sore throat, superficial ulceration of both tonsils, and vascularity of the surrounding mucous membrane; the child had been ill 14 days, had no eruption on the skin, and this could not have existed without the mother's knowledge.

CASE IV.—Michael Connor, nine years, presented on 13th November, 1862, with pneumonia of the upper lobe of the left lung; was anasarcaous; urine scanty and containing blood; had scarlatina 10 weeks previous of so light a nature that he was running about the street all the time.

CASE V.—Michael Wigmore, one-and-a-half years, presented on 13th November, with swelling of the sub-maxillary glands, and an aphthous state of the mouth; was visited three weeks previously for inability to draw the breast, severe sore throat, and ulcerated tonsils. There was no eruption of the skin, though carefully looked for by the mother. This case may be considered exceptional to the rules observed of the disease.

CASE VI.—Jacob Foster, five years, George's-street, was seized, on 9th September with vomiting and purging; scarlatina eruption slow in coming out, and of a dusky hue; on 14th the throat became sore and ulcerated, while enormous tumefaction of the glands in the external faucial region took place. The child, already debilitated in the extreme, continued to sink, and succumbed in two days after, on the 16th September, seven days from the commencement of the illness; no effort at a rally being made, though wine and other stimuli were exhibited, and every possible care was bestowed on him; he was a healthy, strong boy, not gross.

CASE VII.—William Murray, nine years, residing in George's-street, was apparently quite well on 12th November, 1862, and went to school, as usual, in the morning, on returning from which he complained of severe pain in the head, and nausea; then vomited, and continued to do so, at intervals, for three hours. His feet were placed in hot water at bed time, and he got some opening medicine, which was rejected. On 13th his mother thought him better, but he was delirious all through the previous night. On the 14th he was weak and tranquil; about noon his mother observed him lying on his side in the bed, when suddenly, and with a convulsive movement, he threw himself out of the bed; he was replaced in bed, took two or three sips of some whey, and died of syncope in 10 minutes after. In this case there was no eruption or sore throat, and it was remarkable the skin on the surface of the back, and on

the front of the throat, was observed to turn quite black immediately after death, and that on the hands before death, which took place in 44 hours from the commencement of the boy's illness.

CASE VIII.—I was called at eight o'clock, on Saturday, 8th November, to visit Denis Finigan, aged seven years, who had been slowly convalescing from scarlatina, and had been under my treatment since 20th October. The peculiarities of his case were:—

1st. The first symptom was referred to the throat.

2nd. The intensity of the fever, accompanied with feeble, dark-coloured eruption, rigors, and delirium.

3rd. The presence of formication, which was most distressing, and lasted a week; his sleep was very much disturbed, attended with grinding of the teeth, tossing about the bed, the eyes half open. He had slight anasarca, scanty and high-coloured urine, and orchitis at the right side.

I found him, on arrival, violently convulsed; he had been so for three-quarters of an hour before my arrival; the face was much congested, and eyes suffused with turgescence of the vessels of the head and neck: the character of the pulse, together with his debilitated condition, forbade venesection at the moment, and the other remedies were cold affusions, which arrested the convulsions for the time, though they recurred with greater intensity: the administration of calomel and croton oil; application of sinapisms to the calves of the legs, together with an enema of turpentine; but nothing seemed to make an impression on the convulsions, which now lasted three-and-a-half hours, the boy perfectly unconscious the whole time, and I was afraid I was about to lose my patient, when, as a *dernier ressort*, I bled him from the arm to 10 ounces, with marked benefit; they began to be feebler, and after a time ceased; the boy recovered, and is now quite strong; but for some time I dreaded the eclampsia might return, in consequence of the anasarca, and the state of urine. The treatment used with this patient, for the removal of this, was turpentine fomentations to the loins twice a day, the exhibition of James's powder at night, and tincture of the muriate of iron; and for drink, wine, porter, and appropriate regimen.

*From DR. CUMMINS, Ballintemple; date, 19th November.*

The scarlatina first appeared on 22nd October; up to 26th November I had five cases—one of them was almost *in articulo mortis* when I saw it. The prominent symptoms were sore throat; very scanty renal secretion; severe head symptoms; in one case prostration and want of sleep. The disease has travelled steadily from west to east, the northern part of the peninsula being as yet free from it. No case of disease in the puerperal state came under my notice.

*From DR. POPHAM, Senior Physician to the Cork Union Hospital.*

DEAR CREMEN.—I am sorry that I am unable to give you much information upon your queries; as to the first:—

1st. The first case of scarlatina which came under my notice was on the 5th October, though it had been in the nursery, which is not under my care, from an earlier period.

2nd. I have had very few cases as yet, though I have under my charge all the girls from nine years, and all the Lock children. No case has yet occurred among these children, in all about 150. The cases which I have had were a few adults; one was a case undoubtedly of scarlatinal sore throat, though I was unable to detect the rash; no subsequent anasarca took place. I have had no unfavourable case among these workhouse patients.

3rd. In the cases seen by me at the workhouse, the prominent symptoms were dryness, redness, and swelling of the tonsils, uvula, and velum palati; in one case, ending in abscess, severe headache, chiefly of forehead and vertex; circulation from 108 to 120; animal heat above par; copious eruption of a rash of a bright vivid colour, not persistent, but appearing and disappearing, and again reappearing in the same place; considerable irritability of the stomach, with epigastric tenderness; tongue of a gastric character, &c.

4th. I cannot answer this question.

5th. I saw no case of puerperal complication, up to this date; the lying-in wards of the workhouse have been remarkably free from disease; about three or four women are confined there each week.

*From DR. S. H. HOBART.*

I find that the first case of scarlatina in my district occurs on the 1st of September, in Austen's-lane; and that of the first nine cases that appeared, seven of them were in the above lane. There were 96 cases altogether in September; 84 cases in October, and 60 in November. In the first month the greatest number took place in St. Paul's parish, there being 42 out of the entire 96; and, throughout, this parish suffered more than any other. The majority of the deaths were caused, apparently, by an over-dose of the poison; one or two only appeared to have been suffocated by the enlarged glands of the neck. Two died exhausted, apparently from extensive ulceration of the neck, after the bursting of an abscess. Two cases were attacked with violent pain in one or two of the joints, which, after a few days, became swollen and red, and slowly suppurated, followed by similar attacks in other joints, but which were very much relieved by the application of a few leeches. In this epidemic there do not appear to be as many attacked with anasarca as in the epidemic of 1856 and 1857; and where it does occur, it is seldom fatal. I have not met with any case in the puerperal state; and very

few cases at all in adults of well-marked scarlatina, though severe cynanche, partaking much of the character of scarlatina sore throat, has occurred (in houses where scarlatina had existed or was present) without any appearance of eruption; though in one case, when the throat was nearly cured, the latter symptom made its appearance.

*From DR. W. C. TOWNSEND, Junior Physician to Workhouse Hospital.*

The present epidemic of scarlatina first came under my notice at the Cork Workhouse, about two months ago. Since that time I have had under my care, in that institution, 32 cases. Of those, six are still ill; of the remaining 26, some are discharged well from hospital, and all might be but for the severity of the weather.

In private practice, I have had six cases, all doing well, and likely to continue so.

I saw one case, in Passage, in consultation; the child, a little girl about five years old, was very ill for some days; I left her, apparently convalescent, under the charge of the ordinary medical attendant, but was again summoned this morning, after an interval of five days, and found her comatose, with well-marked symptoms of cerebral effusion.

The mortality in the cases that came under my observation is somewhat under eight per cent. Of these, one died of convulsions six hours after I first saw her. In the second, the poison accumulated in the glands of the throat and neck, and the little patient died from impeded cerebral circulation, owing to pressure on the jugular veins. The immediate cause of death in the third case was pulmonary congestion.

The present epidemic, in my experience, is entirely of an asthenic character, the patients requiring full support, wine and broths, with frequent application of external stimulants to the throat, heart, and lower extremities. In all my cases, the throat was more or less engaged; but I have not seen what I would term a bad case of cynanche maligna.

No cases of mine occurred in the puerperal state.

*From DR. CURTIS.*

The scarlatina first appeared in my district on the 12th July. The first case was as follows:—A boy, aged four years, to whom I was called, I found in high fever, with rapid pulse, skin very dry, tongue creamy, severe sore throat, glands of the neck very much swollen; he had been ill 24 hours; vomiting was the first symptom. On the night of the 13th was seized with convulsions, and died the next day. The 14th, this boy's brother, aged six years, took the disease; showed the rash early; the throat was very much engaged; he recovered. I did not see another case for 12 or 14 days, when it appeared in three children of one family, on the Commons-road; one died in about 10 days after it showed itself

in Spring-lane, where it remained a fortnight, attacking some 30 children, all under eight years. About the middle of August it seemed to take a peculiar direction, occurring here and there on either side of the hill overlooking the valley of Black Pool, in as far as the fever hospital on one side, and Peacock-lane on the other. Early in September it appeared to descend into the valley, retracing its steps from lane to lane, reaching the Commons and Spring-lane in a very short time. After this I met it in all parts of my district; but in a very severe form in the neighbourhood of Pope's-quay, and the lanes adjoining. Within the last week, 20th November, it has nearly left the city side of my district, and has concentrated itself in localities where it first commenced, viz., Spring-lane, Dublin-hill, Commons-road, and Ballyvolane; and, as it came to this city in a north-easterly direction, so I hope it is taking its departure in the same path.

The prominent symptoms that I have observed are:—

1. The very short stage of incubation.
2. That for one case in which the rash showed itself fully, there were 20 cases of inflamed throats without any rash.
3. That some cases were known to be scarlatina merely by the fact that dropsy occurred in a short time after the children were suspected of having had the disease.
4. The tendency there was to enlargement of the glands, with ulceration externally; and in one instance a child, aged 10 months, in which the external jugular vein was cut across, and death from hemorrhage ensued.
5. The rapid course it occasionally ran. For example:—M. H., aged 20, a girl of robust health, was perfectly well on Tuesday, 18th Nov.; on awaking next morning, felt slight constriction of the throat; thought so little of it that she dressed; and, on attempting to eat her breakfast, got quite sick in the stomach, and vomited for some time; immediately after diarrhea set in; the vomiting and purging continued up to 12 o'clock on Thursday morning, at which time I first saw her. The rash was well out, but of a dusky purple colour. She seemed extremely weak; her intellect was particularly acute; she was ordered stimulants, to be given freely (which I learned afterwards was not done); she expired on Friday morning, 49 hours from the commencement of her illness.
6. No case of the disease occurred in the puerperal state.

*From* DR. T. W. BELCHER.

MY DEAR DR. CREMEN,—With reference to your forthcoming report on scarlatina, will you allow me to state a few facts?

1st. In the families of the Permanent Staff of our City Militia there are 55 children, not one of whom has been affected with the epidemic, or anything like it. The officers and men reside in various parts of the

city, such as Wellington-square, Old Magazine-road, College-road, Brandy-lane, William-street, Cove-street, Adelaide-street, Thomas-street, Upper John-street, and Summerhill, North. Their exemption is remarkable, as some of these localities have been severely visited by the disease.

2nd. When in Bandon, this day, I learned from Dr. Ormston, who has been Medical Officer of that Dispensary since 1839, and in private practice for a longer period, that in the town and surrounding district not a single case has occurred.

3rd. Dr. Tuckey, Medical Officer of Bantry Dispensary and Workhouse, in a letter to me, dated November 18th, writes:—"There have been some very bad cases here; one I attended, who died to-day, was only attacked on Saturday. It was the most malignant case I ever saw, and from the first it was evident there was little hope. The subject of it was a strong, healthy young woman, about 20; and her case was very similar to what you described in the Fever Hospital—the face dusky purple, all the body of a livid hue, and the features swollen. Stimulants were quite useless."

Again he writes, November 21st:—"Though occasional deaths from scarlatina take place here still, yet, I think, the disease is milder than it was."

*From DR. R. T. FOWLER.*

DEAR SIR,—In compliance with your request, I furnish you with the number of cases of scarlatina I have met with, and the deaths. First case, dated 29th September:—

Number of cases, . . . . .	112
Deaths, . . . . .	10

I had several cases of anasarca, succeeding the first attack, some of which proved very intractable. The cases were principally children, few adults. I met with no puerperal cases.

*From C. A. ALLEN.*

DEAR SIR,—The first cases of the scarlatina which I had were about the middle of August. Since then it has been continuous; and I find, as far as my practice is concerned, that fresh cases are appearing in greater numbers. All my cases, with the exception of about a dozen, were in the northern district; but I found it to be directed from north to south, for I attended many cases in Great Britain-street, Clarence-street, and upper part of Fair-lane, before I saw any case nearer to my house. I had not a single case in the puerperal state. In many cases the patient was understood to be attacked, suddenly, with shivering and sore throat, the glands of which were enlarged and swollen; and in those cases where, at the same time, the eruption, instead of the usual florid shade, exhibited a slight purple hue, I found that the patient seldom recovered, but died

comatose, or in convulsions, generally the fourth day, and sometimes even on the second.

Those cases I found mildest where the eruption scarcely appeared, or appeared only on the fauces, with the ordinary papillæ. The sequelæ of scarlatina, more frequently even than the primary disease, came under my care. Anasarca, glandular enlargements, extending behind and below the ears, and in many instances encircling the neck. These cases I found tedious and wearisome to the patient and practitioner; and where pus was formed, the patients, in two cases, died—the discharge being profuse, and of an unhealthy character. In almost every case, from the appearances when I saw them for the first time, I could generally predict the termination. Some cases were as mild as on any former year I have attended. As far as I can make out I had, of scarlatina patients since August, 114, and the number of deaths were seven; but, of that 114, 34 cases remain, of which I did not see the termination—so that seven in 80 died.

*From E. J. O'KELLY, Apothecary to the Hospital.*

One hundred and twenty-nine cases of scarlatina admitted from 1st August, 1862, to 26th November, 1862; of these 15 died.

*From DR. O'CONNOR, Physician to the Mercy Hospital.*

The number of cases of scarlatina that came under my notice was 15—the first occurring in the middle of September, in the vicinity of Castle-street, the others in the north side of the city—ranging from Sunday's Well to Montenotte. No puerperal case presented.

*From DR. B. JOHNSON, of the Carrigaline Dispensary.*

DEAR SIR,—I must apologize for not answering your letter before; but really I was not able to do so, as I was so much engaged in attending scarlatina cases, that were very numerous in this place, but are now considerably on the decrease. The number I attended was very near 100. About 15 per cent. were fatal; a few cases were attended with cerebral symptoms; some with glandular swellings and cellular sloughings; 11 cases were attacked in one house, where the sewers were bad, and dung heaps in the locality; two were attended in the puerperal state; and I think that there is a strong disposition in the constitution to receive it at the particular time, as I have observed in my practice that incipient cases are often the forerunners of the epidemic in that state.

*From DR. HUMPHRIES, Queenstown.*

No. 1. Scarlatina first appeared in Queenstown about the beginning of October.

No. 2. Between that time and the present (Nov. 29th) about 15 cases occurred, two of which proved fatal.

No. 3. The prominent symptoms in the worst cases were excessive inflammation and ulceration in upper and back part of fauces, and in two cases purulent matter exuded from the nose. In all the cases the eruption was well marked.

No. 4. I attended no case in a puerperal state.

*From JOHN REARDON, Undertaker.*

Number of coffins sold from the 18th August, 1862, to 22nd November, 1862, for children under 10 years of age, . . . . .	19
Corresponding period of last year, . . . . .	5
	<hr/>
Increase, . . . . .	14

*From MR. FLANAGAN, Undertaker.*

DEAR SIR,—On referring to my books, I find that the number of childrens' coffins charged in, from the 24th of August to 24th November, 1862, amounts to 53; and for the corresponding period last year, 29.

*From PATRICK O'SULLIVAN, Sexton.*

For the month, August, 1861, . . . .	23
„ September, 1861, . . . .	17
„ October, 1861, . . . .	6
„ November, 1861, . . . .	12
	<hr/>
	58
For the month, August, 1862, . . . .	19
„ September, 1862, . . . .	27
„ October, 1862, . . . .	51
„ November 22nd, 1862, . . . .	42
	<hr/>
	139

Return of the number of children, under 10 years of age, interred in the Botanic Cemetery for four months, as above, of 1861, and three months and three weeks of 1862.

*A Short account of an Immense Tumour of the Lateral Region of the Neck, and its Removal.* By DR. EDWARD MURET, of Vevey, Switzerland.

IN the month of September, 1860, a man presented himself to me, suffering from a tumour of about the size of a man's head; this convex tumour presented the form of a segment of a sphere, rather flattened,

and of unequal surface, occupied the side of the neck, and filled up the subtemporal, the parotidean, and the submaxillary spaces. A line drawn from the mastoid process through the meatus externus of the ear to the angle of the eye bounded its superior limits, whilst a line drawn from the fifth vertebra to the lower edge of the larynx included it inferiorly; posteriorly the tumour was confined by the occipital muscles, while in front it was lost near the angle of the mouth. Larger inferiorly than above, its approximate circumference measured 55 centimetres, while its average depth could not have been less than 10 or 12 cent. The patient himself calculated the weight of the tumour to be about four pounds. The posterior half of this growth presented a curved deep sulcus, having its concavity turned forwards, in which was imbedded the sterno-cleido mastoid muscle, which thus divided the tumour in two unequal parts, the largest being in front. The smallest portion was of a semi-lunar shape, appeared movable, and independent of the larger mass placed in front; each half of the tumour was further accompanied by an appendix in the shape of a movable tumour, the one covering the mastoid process of the size of a hen's egg, and the other somewhat larger, filling up the subtemporal space in front of the ear.

The skin covering this mass was tight drawn, and of a bluish red colour; it was traversed by veins of large calibre, and was adherent in the centre to the subjacent structure, whilst at the edges it was free and loose. About the central portion the skin was scarred by the obliterated tracks of old fistulous openings, under which the structures could be felt of hard cartilaginous consistence.

This large mass felt perfectly movable posteriorly, and in its inferior third especially, where it felt quite floating and free from adhesions, but everywhere else it was perfectly motionless, and as if tightly bound down, especially over the parotidean and submaxillary spaces. The posterior half gave unmistakable evidence of fluctuation, as also the general circumference of the mass, but less distinctly. The skin tight drawn and very thin, seemed ready to give way in several places. An exploratory puncture with a trocar gave issue to about a teaspoonful of a reddish yellow viscous fluid. No pulsation could be felt anywhere; the patient never felt any pain in the tumour, which could be freely handled without causing discomfort. A few enlarged but not indurated glands could be felt above the clavicle and sternum, but nowhere else, while the liver, spleen, and thyroid were in a normal condition.

The patient was 28 years of age, tall and strongly built. A fine specimen of scrofulous temperament, with fair hair, large projecting blue eyes, long eyelashes, thick nose, large mouth, and voluminous lips, thin skin, fresh complexion, large feet and hands, with curved nails. His father had died of pneumonia, at an advanced age; his mother still alive, subject only to rheumatism; his brothers and a sister are all extremely

scrofulous, one of them suffering from caries of the tibia. I attributed the unhealthiness of the children in the family to the position of their home, which is built up against a steep acivity, and completely smothered in by dense and humid plantations. This young man, by trade a mason, had always enjoyed good health, a good workman, not a great drinker, but still fond of keeping a merry Monday, with no work and plenty of feasting. He was extremely anxious that an operation should be tried, as the tumour had greatly increased of late, often interfering with his breathing, and preventing him from work, besides which he wanted to get married. The history he gave of the case was as follows:—About eight years previously he fell from a height of 25 feet, pitching on his face, and sustained a cerebral concussion, which left him in a state of stupor for two days. He completely recovered; but five or six weeks later he took notice of a small kernel, which had attached itself to the ascending ramus of the inferior maxilla of the right side. In the course of six months this kernel had grown to the size of a walnut. He then sought admission in the hospital of Lausanne, where the tumour was punctured, and a small quantity of a sanguinolent fluid escaped, having an extremely fetid smell; the cavity was then injected with iodine; in due time the cyst suppurated, and eventually disappeared. He continued well for a few months, when, having been exposed to cold during his period of yearly military service, he was suddenly seized with pain in the cicatrix, and in a few days the tumour reappeared, and quickly acquired the dimensions of a hen's egg. By the year 1854 the tumour was the size of a large pear, reaching backward to the base of the ear, with but little freedom of motion; he again returned to Lausanne, where, after crucially dividing the skin over the tumour, this last was seized, and a great portion of it included in a tight ligature. The included portion eventually sloughed away, leaving the surrounding tissues greatly indurated. He left the hospital after nine weeks, the wound being healed; but after a time, the tumour having again begun to increase, he placed himself in the hands of a physician, who gave him internal remedies and cauterized the part with potassa fusa. In five weeks the tumour had considerably diminished; it was discharging pus and a glairy viscous fluid; as, however, the suppuration continued, the patient got tired of this treatment, and placed himself under the care of empirics, but gradually became worse, till, in 1856, he entered the hospital of Berne, and came out of it again in a few weeks no better than when he went in. From that date to the present time, but especially during the last two years, the tumour grew steadily larger; from time to time small abscesses formed in its substances, and on more occasions than one some of the large cutaneous veins which ramified over the tumour burst, and gave rise to serious hemorrhage, which compromised the safety of the patient.

The anxious request of the patient, added to the enormous increase of the tumour, the inconvenience it occasioned, and the fact that it was in part cystic and movable, together with the good health of the man, induced me to accede to his wishes, by performing an operation which had been declined by others. The nature, position, and connexions of the tumour convinced me beforehand that no single method of proceeding could be adopted in a case like this; what I most feared was hemorrhage, not only from the superficial vessels, but from the parenchyma and substance of the mass itself; and, to avoid this as much as possible, I determined on making free use of Chassaignac's *écraseur*.

On the 17th of October, 1860, aided by Drs. de Montet, Favargnié, and Rossier, the patient being in the recumbent position, I surrounded, by two elliptical incisions, the ends of which were connected at the upper and lower ends of the tumour, a portion of integument 19 cents. in length and 11 cents. in breadth. The posterior incision following the course of the sterno-mastoid muscle, which, as above stated, was pressed back by the central mass, and presented a curve with its concavity forwards. The most critical moment of the entire operation was, when making these two incisions, the hemorrhage from the cutaneous vessels was such that the floor was in a moment flooded with blood. I immediately tied the largest vessels, and, having thus somewhat controlled the bleeding, I proceeded rapidly to enucleate the anterior portion of the mass, using my fingers and nails for that purpose. I found no difficulty in isolating the anterior portion of the tumour until I came on a level with the antero-lateral muscles of the neck; here I again encountered considerable hemorrhage, and had to tie several arteries, as also a large branch of the external jugular. I then proceeded in a similar way to liberate all the posterior half of the tumour, which I succeeded in doing without much loss of blood. During the process of enucleation several of the cysts gave way, discharging a quantity of grey-coloured cheesy matter. Having thus liberated all the circumference of the tumour, it was still adherent by its upper centre to that region, bounded posteriorly by the sterno-mastoid, and anteriorly by the ramus of the jaw; and here it seemed to dip considerably, at the same time that it was firmly attached to the bone in the vicinity of the external meatus of the ear. I now passed the chain of the *écraseur*, by means of a strong curved needle, through the centre of the mass, on a level with the antero-lateral muscles of the neck; and having severed it here through its attachments, I again passed the chain round the tumour, but in a direction perpendicular to the first, in order to detach it from its parotidian and auricular attachment, which being effected, the whole mass fell off. The *écraseur* had crushed its way through a mass of hypertrophied glands, which filled up the parotid region, dipping deep down behind the jaw, down even to the carotid. It would have been difficult to decide whether the glandular

masses remaining formed part of the parotid or not; what is certain is, that from the mouth being drawn to the opposite side it was evident that many branches of the pes anserinus had been included in the loop of the écraseur. Having terminated this portion of the operation, we proceeded to remove the part included between the sterno-mastoid and the occipital muscles, where again we met with close adhesions and excessive hemorrhage, which we succeeded in controlling, partly by ligature and partly with perchloride of iron. The operation being now concluded, we found the floor of this extensive wound to be formed of glandular tissue, which I hoped to get rid of by suppuration. The operation had lasted an hour and a half, and had been brought to a satisfactory termination, thanks to the admirable mode in which I had been assisted. The patient had lost a great deal of blood, and was very weak. The edges of the wound were gently brought together by a few strips of adhesive plaster, and the whole covered with a fenestrated dressing and some lint.

After the operation I carefully examined the tumour; it evidently consisted of four different elements. 1st.—The entire circumference, and especially the posterior half, was formed of veritable cysts, some loosely united to each other, some more intimately, but all connected by normal cellular tissue. Their walls were thin, even, and dense; their internal surface like that of a serous membrane; they contained an homogeneous, glairy liquid of a yellowish brown colour. These cysts evidently constituted the portion of the tumour which had been developed last. 2nd.—There were other cysts principally situated in the superior and anterior portion of the tumour, and about the region of the jaw, having denser walls, more uneven, and adhering very closely to the centre of the tumour and the surrounding tissues; their inner surface was not smooth, but presented the appearance of broken down and suppurated glandular tissue, of a greyish blue colour, here and there streaked with blood; examined under the microscope it exhibited pus cells, plenty of free nuclei, many large cells containing one and two nuclei and nucleoli, full of granular matter and oil globules. 3rd.—About the base of the mass, and on a level with the lateral muscles of the neck, there were several lymphatic glands considerably enlarged, but of normal structure. 4th.—There was the central mass, completely adhering to the skin, which, when cut into, presented a glistening, pearly appearance, of considerable hardness. In the centre this mass was of decidedly fibrous structure, with some few nuclei, offering great resemblance to sarcoma, and in it were imbedded some few cysts, with ill-defined walls, containing a fluid analagous to that found in the first. I think it likely that this mass consisted principally of cicatricial tissue, resulting from the action of the several means which had been adopted to destroy the tumour—ligature, caustics, iodine injections, &c., &c. I submitted the tumour to Professor Clôëtta, of Zurich, who considered it cancerous, in different degrees of

development. Doubtless the central mass was degenerated, and presented the character of sarcoma, but it was surrounded by hypertrophied glands of unusual physiological structure, without indurated or lardaceous structures. In no part of this tumour, which originated about eight years ago, could any altered tissue be found, except in the centre, at a spot which had been exposed to the action of many therapeutic agents nor was any indurated gland to be found anywhere in its neighbourhood, neither did any of the many punctures, incisions, &c., take an unhealthy action, throwing out fungoid growths, &c., but always quickly healed up.

This patient is only 28 years of age, he never suffered from lancinating pains; he has not the least appearance of malignant disease in his countenance, although he offers a most perfect specimen of the scrofulous diathesis. I am therefore inclined to look upon it as simply a scrofulous tumour, and the hardened central mass as the result of remedial applications.

After the operation there succeeded but little inflammatory reaction; there was great suppuration; and, after a time, some of the glandular masses remaining were removed by ligatures and *potassa fusa*; by the middle of December the wound was completely closed; the thickness of the surrounding tissue was disappearing under the application of iodine; and by the end of the year the patient left the hospital. He is now in good health, and able to follow his trade, nor is there for the present any tendency to a fresh growth or other enlargement.

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## CLINICAL RECORDS.

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*Case of Acute Inflammatory Phymosis.* By CHRISTOPHER FLEMING, M.D., M.R.I.A., Surgeon, Richmond Hospital; Visiting Surgeon, Dr. Steevens' Hospital, &c., &c., &c.

A policeman, aged about 25 years, and of stout build, was brought to the Richmond Hospital, in the middle of the night, in July last, having been accidentally found, by one of his comrades, in bed, faint and in a state of extreme weakness. When he reached the hospital he was perfectly blanched and almost pulseless, and on examination his trowsers and under-clothes were discovered to be drenched with blood. On exposure, the penis and scrotum were concealed from view by an enormous mass of coagulated blood, a portion of which protruded so much beyond the rest as to give the pupil in charge the idea that there was a large fungoid growth from the right side of the penis, and that from this the hemorrhage originated. In the weak state of the man any satisfac-

tory history of the case at my visit was utterly impossible to learn; and his prostration was so great that the immediate command of the bleeding, hitherto uncontrollable, was now imperative. I rapidly removed as much of the coagulated blood as I could, and at once perceived that I had to deal with a most aggravated case of "acute inflammatory phymosis"—that the projecting coagulum alluded to had burst through an irregular, jagged, gangrenous opening, about the size of a shilling, on the right side of the prepuce, and about an inch and half from its orifice—that bright arterial blood was welling up through this mass—and that on tracing the source of this hemorrhage it proceeded from a deep excavated ulcer situated on the corresponding part of the glans penis underneath. I at once slit up the prepuce, in the mesian line, in front, and trimming it on each side towards the frenum, without any consideration for the inflammatory conditions present, carefully applied the requisite dressings, and directed the usual general treatment, in which Hoffman's anodyne and Battley's sedative constituted the principal therapeutic agents. The flow of hemorrhage was immediately stayed without the necessity for any ligature, and never recurred—the wounds and ulcerated surfaces healed kindly, and the man was convalescent within a month from the date of his admission into hospital. He remained afterwards well, as far as I could learn, a deep chink yet existing in the site of the ulcer; this, during the erect state of the organ, produced some inconvenience from the crooked shape it necessarily assumed, a portion of the glans and an adjoining portion of the right crus of the penis having been obviously involved in the ulceration. It was ultimately ascertained that the situation of the original ulcer on the penis was on the right side of the corona glandis—that the use of mercury was commenced, the man still performing his usual duties, and that acute inflammatory phymosis supervened, followed by gangrene of the prepuce and the destructive ulceration noted.

Cases such as the above, the symptoms of which are, perhaps, too briefly reported, must be familiar to every hospital and dispensary surgeon. Inflammatory phymosis presents itself from day to day—sometimes very acute: again, semi-acute or chronic. It is to be met with at all periods of life—in the infant, in the child, in adult life, and in old age, and at each period different causes may produce it, and different treatment may be suitable. The summary one of the operation of simple section of the prepuce, or other more complicated operation, is often, however, demanded. Want of cleanliness, excoriations, or warty growths, constantly give rise to the affection; but above all, and amongst all, no more rife cause originates it more frequently than ulceration between the glans and prepuce, especially along the corona glandis, or near the frenum, and, be such ulceration specific or not, the greatest circumspection is required when unequivocal evidence of the attack manifests itself. It would be quite out of place, indeed, perhaps,

irrelevant, to consider this subject in detail, but there are two symptoms, the supervention of either of which, in the progress of acute inflammatory phymosis, would appear to demand the utmost caution and prompt action of the surgeon. The one is, retention of urine, partial or complete, from the general tumefaction of the preputial integument or contraction of the preputial orifice, and the other is, hemorrhage. The most rapid destruction of this most important organ will be the result of neglect, and lesions will be entailed which no surgical ingenuity or skill can remedy. Numerous cases might be instanced, as illustrative of this. The comparatively trifling one of gangrene of the prepuce, the more serious one of gangrene of the glans penis, and the still more serious one of exposure of the urethra by ulceration or by sloughing, must suggest themselves to the reflecting surgeon. However he may hope for a successful issue by those local and those general appliances familiar to all practical surgeons in very many and very extreme cases, in the special cases I allude to, there is no alternative; the future comforts of his patient will be otherwise, within a very few hours, altogether compromised. The surgeon must, hence, be prompt—he must have recourse to circumcision, no matter what the state of parts may be. Local inflammation is at its height, the organ is enormously swollen; and this, in the majority of instances, so much, from the large infiltration of its tegumentary covering, that it is no exaggeration to say that the end of the prepuce is often two or three inches in advance of the situation of the glans. The surgeon's operation, then, must be "*l'opération de convenance*;" let him first fairly slit up the prepuce until he so exposes the glans as to satisfy himself that it is free from constrictions of any kind, and let him, at the same time, remove any redundant portions of the prepuce, confining his incisions within those limits which will ensure a shapeful protection of the glans.

This mode of treatment, in the more aggravated stages of "acute inflammatory phymosis," I have rarely seen followed by any untoward results. However irregular in its curative stages the original seat of ulceration may be, the fresh wound-surfaces progress most favourably; neither phagedena nor gangrene attacks them, although the lines of incision made have been in the immediate seat of such conditions, or in the vicinity of the flaps removed. The dressings I apply to the bleeding surfaces are usually narrow slips of lint dipped in the compound tincture of benzoin, and over them a compress of requisite size is placed. This compress may be shaped somewhat like a Maltese Cross, with an opening in its central portion for the orifice of the urethra; it is then damped with cold or iced water, and so moulded to the glans penis as to embrace it fully, and so lapped over the recent wound-surfaces that a narrow strip of lint or calico will secure its edges, and, at the same time, exercise a gentle and uniform compression around. I mean not to say that the hemorrhage

supervening on this operative proceeding will always be commanded as above. It will happen that an artery or two may bleed so sharply as to require a ligature, and this particularly in the vicinity of the frenum; but, as regards my experience, this is rather the exception than the rule. Very much will depend on the proper local management as to position, as to temperature, as to traction of any kind on the organ affected—but these details would require more space than is here admissible. The general treatment, moreover, is equally important. I find no combination of remedies more successful in the earlier periods of those cases than tartar emetic, in doses suited to the age and constitution of the patient; and this combined with some one of the preparations of opium, in tolerably large doses, kept under check, however, as to any absolute narcotic effect, and corrected by proper attention to the nutritive functions. Stimulants must be exhibited according to the special circumstances of the case.

I have not alluded to the immediate after-treatment suitable to such cases as the above, neither to that treatment which might be deemed requisite at a later period. I will merely incidentally remark that I have avoided the exhibition of mercury with any other object than that of an aperient or purgative, and I have not had reason to regret it. I have given to the violent inflammatory processes and their results the chance of producing the same salutary destructive action upon the specific disease, if it existed, which is occasionally sought for from caustic or from escharotic applications; and if constitutional symptoms should ultimately happen to spring up, I find that they are of a comparatively mild and manageable form, and not of that mongrel, worrying character which too often baffle the surgeon in their treatment, and impress his patient with most unfavourable notions, indeed, as to his therapeutic remedies.

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*A Case of Epithelioma, and Removal of a Portion of the Lower Jaw.* By P. C. SMYLY, M.D., T.C.D., Surgeon to the Meath Hospital.

A. M., aged 40, presented himself at the dispensary of the Meath Hospital early in February, 1862. He complained of a tumour under his tongue, which, from its size, rendered it difficult to get solid food past the tongue; and the frightful stench kept him in a constant state of nausea. On looking into the mouth, I found a tumour occupying the whole floor of the mouth, the portion of the tongue about the frenum, and attached to the central portion of the lower jaw; all the front teeth were loose. The tongue was so much pushed back by the tumour that the tip could not reach within a quarter of an inch of the front teeth. The surface of the tumour was in a state of slough. I took him into hospital, gave him chlorinated soda to wash his mouth, and tonics internally. During his stay in hospital the disease increased rapidly in size.

The patient was told that the disease could not be removed unless by

operation. The probable result—namely, that the operation would only remove the diseased part, and that the disease would, in all probability, return, and also the dangers of the operation—were fully laid before him. He at once said:—"I'll undergo any punishment to get rid of it. I would rather have my head cut off than have it remain as it is." Under these circumstances operation was decided on.

*Operation.*—The patient was chloroformed in the semi-erect position on the operating table. The cheek was well drawn upwards, so as to stretch the integuments. A scalpel was pushed up through the soft parts, external to the jaw, and anterior to the facial artery where it crosses the bone, so as to separate the parts from the bone. Into this narrow wound a Hay's saw was introduced on the flat, and then turned against the bone. The cheek being now let loose, the internal edge of the wound kept quite clear of the teeth of the saw, the elasticity of the parts drawing it inwards, and the bone was partially divided. The same steps were repeated on the other side. The bone was then cut through on each side with a cutting bone forceps. The integuments were again stretched over the jaw at both sides, and the small incisions joined together by one running along the lower edge of the jaw. With one sweep of the knife the soft parts were separated from the central portion of the bone. This was forcibly drawn through the wound, and the dissection commenced at the base of the tongue, and was rapidly completed; four small vessels required ligature; an enlarged gland (the submaxillary) was then dissected out. The submaxillary artery which passed through the tumour was divided. The ligature fixing the tongue was passed out through the mouth, and the wound closed with silver suture. The man was then sent to bed and given some wine.

On Tuesday, the day after the operation, the report was:—"He has rallied completely, pulse 108, bowels regular, slept well, and at the hour of visit was reading his newspaper.

"Wednesday.—The ligature securing the tongue was removed. Saturday.—The patient sleeps well, drinks from a cup, and is commencing to articulate. The external wound is healing by first intention; and the internal surface is granulating well."

The case progressed well, and the patient left the hospital with the wound completely healed, and speaking quite distinctly. He remained perfectly free from disease for about two months, when it began to return in the cicatrix. At the end of the third month the disease was most extensive.

The peculiarity of the operation above described is, that the bone was completely divided before the large incisions were made. That is to say, the most painful part of the operation was completed under the full influence of chloroform, before hemorrhage could render the anesthetic condition of the patient dangerous.

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2. Medical psychology, comprising a brief exposition of the leading phenomena of the mental states, and of the nervous apparatus through which they are manifested, with a view to the better understanding and elucidation of the mental phenomena or symptoms of disease. By Robt. Dunn, F.R.C.S. Eng., &c. London: Churchill. 1863. Fcap. 8vo, pp. 87.
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5. Atlas of portraits of diseases of the skin, issued by the New Sydenham Society. 3rd fasciculus portraits, VII., VIII., and IX.
6. Statement by Dr. Murchison. Pamphlet.
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8. De la glycérine de ses applications a la chirurgie et a la médecine. Par M. Demarquay. Paris: Asselin. 1863. 8vo, pp. 240.
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11. Stammering and stuttering, their nature and treatment. By Jas. Hunt, Ph.D., &c. Fifth Edition. London: Longmans. 1863. Post 8vo, pp. 256.
12. On effusions of blood in the neighbourhood of the uterus, or the so-called peri-uterine hæmatocele. A thesis for the M.D. degree. By H. A. Tuckwell, M.A., M.B., Oxon., &c. Oxford and London: Parkers. 1863. Pamph. pp. 41.
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22. Norges officielle statistik, udgiven i aaret. Christiania. 1861. 4to, pp. 144.
23. Ladegaardso model farm, near Christiania, belonging to H. M. King Charles XV. Drawings and models of agricultural implements for the Norwegian national schools. 4 sheets.
24. Geologiske undersogelser, Bergens omegn af Th. Hiortdahl og M. Irgens—Med et Tillæg om Fjeldstykket Mellem Lærdal og Urland Samt om profilet over Filefjeld, af Dr. Theodor Kjerulf. Christiania. Malings 1862. 4to, pp. 34.
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33. The British journal of homeopathy. No. LXXXIV.

34. On human entozoa; comprising the description of the different species of

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35. Menton: essai climatologique sur ses différentes régions. Par le Dr. Jacques François Farina. Paris: J. B. Baillière et Fils. 1863. Fcap. 8vo, pp. 72.

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37. The report of the Armagh district lunatic asylum for year 1862. By Robt. M'Kinstry, M.D., &c.

38. Nice et son climat. Par Edwin Lee, M.D., &c. Paris: Baillière et Fils. 1863. Fcap, pp. 162.

39. The social science review: a journal for the advancement of social science, and for literary and scientific intelligence. Vol. II. No. 45.

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## GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review. Churchill.

2. The Edinburgh Medical Journal. Oliver and Boyd.

3. The Retrospect of Medicine. Edited by W. Braithwaite. Simpkin and Co.

4. The Half-yearly Abstract of the Medical Sciences. Edited by W. H. Ranking, M.D., and C. B. Radcliffe, M.D. Churchill.

5. Pharmaceutical Journal. Churchill.

6. The Lancet.

7. The Medical Times and Gazette. Churchill.

8. Association Medical Journal. Honeyman.

9. The Medical Circular. Harris.

10. Medical Critic and Psychological Journal. J. W. Davies.

11. The Asylum Journal of Mental Science. Churchill.

12. The Glasgow Medical Journal. Mackenzie.

13. The Athenæum.

14. The Dublin Medical Press.

15. The London Medical Review. Fieldson and Jary.

16. The Natural History Review. Williams and Norgate.

17. The Dublin Quarterly Journal of Science. McGlashan and Gill.

## INDIA.

18. The Indian Annals of Medical Science. Calcutta: Lepage and Co.

19. Transactions of the Medical and Physical Society of Bombay.

20. The Madras Quarterly Journal of Medical Science. Madras: Gantz, Brothers.

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21. The Australian Medical Journal. Melbourne: Wilson and Mackinnon.

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23. The American Medical Times; being a Weekly series of the New York Journal of Medicine. New York.

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26. The American Journal of Insanity, Utica, N. Y. State Lunatic Asylum.

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35. Bulletin de l'Académie de Médecine. Paris: Baillière.

36. Mémoires de l'Académie de Médecine.

37. Revue de Thérapeutique Médico-Chirurgicale. Paris: Dr. A. Martin-Lauzer.

38. Journal de Médecine et de Chirurgie Pratiques à l'Usage des Médecins. Par Lucas-Championnière. Paris.

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40. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Moreau. Paris: V. Masson.

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42. Répertoire de Pharmacie. Par M. le Dr. Bouchardat.

43. Gazette Médicale de Strasbourg.

44. Journal de Médecine de Bordeaux.

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52. Annales et Bulletin de la Société de Médecine de Gand.

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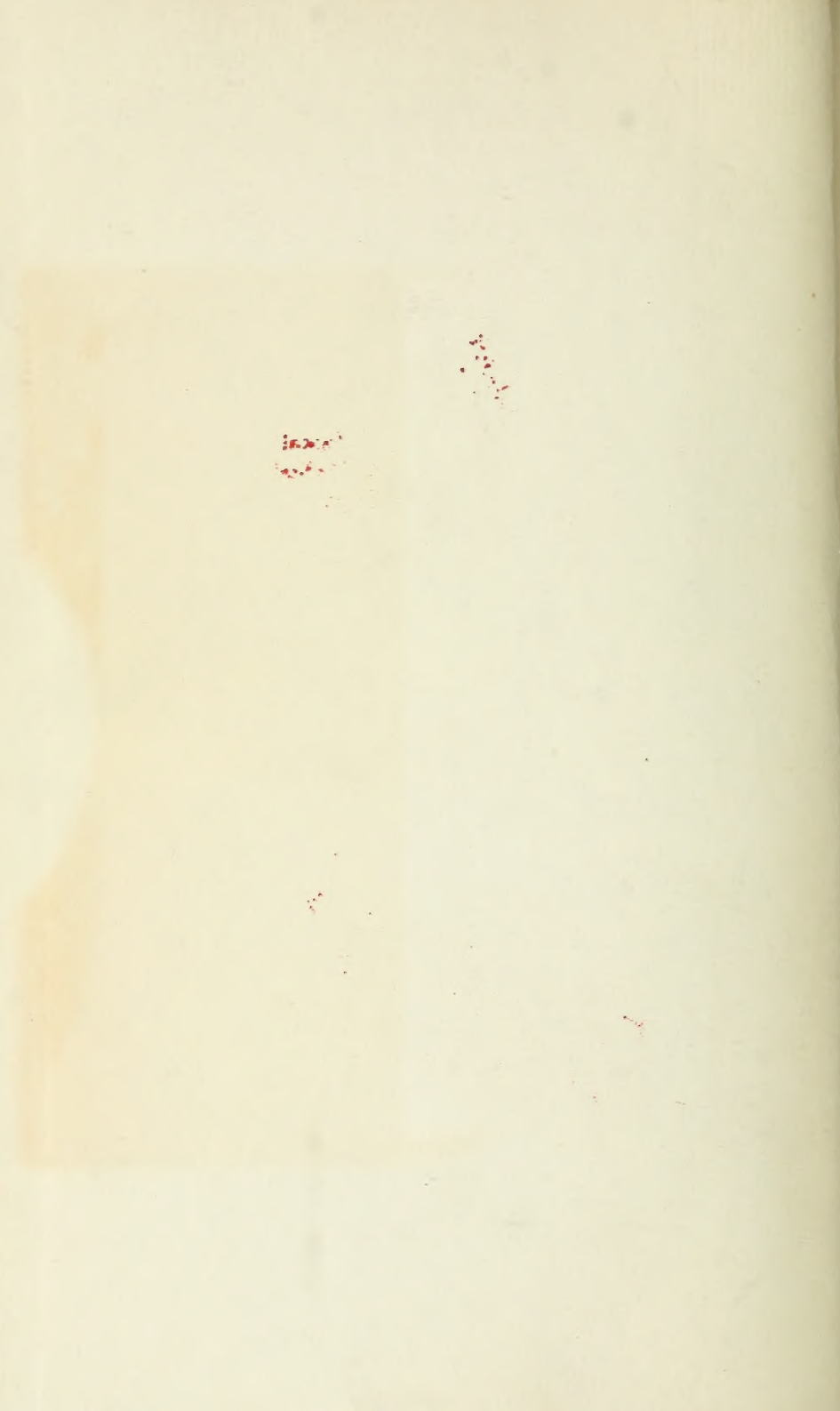
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